

THE AMERICAN FARMER

ESTABLISHED 1819

NINTH SERIES.

BALTIMORE, MD., MARCH 15, 1882.

VOL. I.—No. 6.

PRIZE ESSAY.

On the System or Crops best adapted to supersede in part the Tobacco Crop in Southern Maryland, now as a rule so unprofitable.

By Dr. JOSEPH B. OWENS, Anne Arundel County, Maryland.

Awarded the prize of \$25.00 for best essay on this topic, offered by THE AMERICAN FARMER. Committee: Hon. Wm. B. Hill, of Prince George's; Dr. George W. Dorsey, of Calvert; and George Thomas, Esq., of St. Mary's.

It is now conceded by thoughtful farmers that a change in the agricultural productions of lower Maryland, if not, indeed, an altered system of agriculture, is demanded by the vital interests of its citizens. The uncertainty and the cost of producing tobacco, which has been its chief crop, as well as the small prices so generally realized for it, induce doubt as to its continued profitable cultivation. An annual decreasing supply of labor, the very general financial depression prevailing among tobacco planters, and the lessening demand for foreign markets for "Maryland leaf," strengthen the opinion held firmly in the minds of many that a more varied farming is undoubtedly the part of wisdom, and that the cultivation of tobacco cannot further successfully be continued here, at least in such quantities as heretofore, and to the exclusion of other interests.

It is difficult to suggest "the system or crops that should supersede it." For more than a century tobacco has been the chief money crop of this section. Land owner and laborer alike are accustomed to its culture. To suggest a discontinuance of its growth is by many persons regarded as the opinion of an ill-balanced mind, or of an impracticable person. Fortunes that have been made in the past are cited as reasons for its continued production; fortunes that have been lost on account of repeated failures to grow a profitable crop are forgotten. And the query is propounded, what will you substitute for tobacco? It cannot be corn, nor yet can it be wheat. And beyond that is midnight darkness, for other crops besides tobacco, wheat and corn are unknown in southern Maryland.

The absence of rapid transportation, as well as the want of home markets, such as are afforded by nearness to cities and towns, has precluded the culture of small fruits and vegetables.

From the lack of proper buildings and of capital, as well as experience in buying and feeding stock cattle, farmers have not been disposed to make winter feeding a part of their system.

Milk and butter have been only desired for home consumption, whilst heavy rates for freight by water to Baltimore would make hay an unprofitable crop; so, therefore, in any system considered by the lower Maryland farmer, the planting of tobacco seemed to him to be essential. Its cultivation on as large a scale as possible was exceedingly tempting, as when a full growth was made (and failures are never anticipated) from fifty

to sixty dollars could be realized to the acre, whereas not more than fifteen or twenty-five dollars can be obtained from an acre in wheat or corn.

The Potomac and Patuxent planter, conscious that cheap freights would bring grain from Chicago to Baltimore for about the same charges that were demanded of him, conscious too that his worn out soil could not compete in the culture of grain with the Western prairies, enriched as they are by the decomposed vegetable growth of centuries, therefore naturally placed greater reliance upon his tobacco crop, which had been the support of his ancestors, and with the cultivation of which he was thoroughly familiar.

It is, however, maintained by many that the culture of tobacco as a specialty is profitless, and should be abandoned; that if for no other reason, because it is directly and indirectly destroying the fertility of the soil, which is the farmer's capital.

Let us note for a moment some of the evils attendant upon its growth. Tobacco is an expensive crop, expensive as to labor, expensive in preventing attention to other interests upon the farm. Its culture demands at least one able-bodied laborer for every four or five acres devoted to its growth, and it requires that the laborer should be content with a small return.

No other crop, no species of work however important can be given precedence over it. During April and May the plant beds must be cleared of weeds and every sprig of tender grass. This is finger work, tedious and slow; and often, indeed almost always, engages the available force of the farm for weeks at this season. In June and July, earnest hoe work must be given the young plant after it has been set out upon nicely prepared land; if not, the vigorous growing crab grass and purslane will soon smother the much slower growing tobacco plant not yet large enough for horse cultivation.

There can be no respite allowed here—corn has been planted under the press of work upon improperly prepared land; too frequently is the case that the manure intended for corn remains in the barn-yard; if the transition from winter to spring has been sudden, time has not been allowed for the repair of fences; and now if there were hay upon the tobacco farm it could not be secured, for the tobacco must be "started," i. e. weeded and re-weeded with the hoe; and ere that is completed, wheat harvest is at hand.

Work in the tobacco field now ceases, it is true, for the golden grain must be garnered; but as quickly as possible, the reaper is exchanged for the hoe. Wheat must remain in shock until tobacco is beyond danger from grass and weeds, and often remains unthreshed, until damaged by a rainy spell.

August brings a "glut" of worms; these must be destroyed, and again finger work is required. The year's work is lost if these pests are not kept down, and from morning until night their destruction must be pursued with vigor. In other farming sections this month is devoted to cleaning fence corners of foul growth and fields of briars, etc. The winter's supply of wood is secured, but there

is no time for these matters upon a tobacco farm; and in truth if worms are numerous, there is seldom an opportunity to prepare a clover or pea fallow for winter grain. From September until frost, tobacco housing is the order of the day. This is the planters' busy harvest time. Wheat seeding and corn cutting must be deferred until tobacco is beyond danger from frost—then these interests may receive the planters' attention; they are secondary interests and must be postponed until the crop of the farm is sheltered.

Seldom is it possible to suitably prepare the soil for wheat seeding, and seldom, indeed, can the grain be deposited in the ground in time to make that autumn growth so necessary to enable it to withstand the blasts and frosts of winter.

Rarely is corn shocked until after the autumn storms have stripped the stalks of its leaves, or until they have at least been rendered valueless for animal food. Of course this is deplored by the planter, and is prevented if possible; but tobacco must have precedence given it; frost would utterly ruin it; it constitutes the planter's chief dependence, and naturally it receives his first thought, although the wheat crop is shortened, and there is for the same reason an inequality in the growth of the crops.

The approach of winter gives the planter but little respite from the press of work which has been entailed upon him since the tiny tobacco seed germinated in the first warm days of the preceding spring, for as soon as corn has been stored away every damp spell must be devoted to stripping tobacco. This involves much labor, and actually engages the short days of winter, inducing the neglect of many essential matters. No planter can have his crop ready for the spring or early summer market if he does not avail himself of every moment possible at this season.

In few stables upon tobacco farms, especially upon the smaller farms, where the supply of labor is limited in proportion to the tobacco production, do the work horses receive during "stripping seasons" regular and proper attention. Seldom, if ever, is any attention paid to the formation of a compost heap, or the gathering together of fertilizing elements which are to be found on every farm.

The winter's work upon a tobacco farm is to strip, to strip and to strip. When this cannot be done then fodder is hauled to stock yard, and wood is brought to the house. Really, but little else is done until an open spell in February admonishes the farmer that the time has come for him to make plant beds for another tobacco crop. And that of last year is still in his barns, not yet ready for market. Who can estimate the cost of the cultivation of tobacco, or tell the losses entailed by its growth?

The popular opinion is, however, that no other crop will pay as well; that tobacco must remain the chief product of this section. A few persons dissent from this view of the situation, and maintain that its profits exist only in the imagination. For all this, no new order of things is attempted, nor do

any seem disposed to take the initiative in a new departure.

Those who have large estates, unencumbered with debt, are satisfied with their income, which they receive from tenants working on the share system. These land owners confess to lessening profits, and deplore reduced yields from their property, but they will embark in no new enterprises, nor attempt the cultivation of anything but corn, wheat and tobacco; whilst those whose estates are embarrassed have neither the nerve nor the ability to make a change.

The character of the soils of this section vary from the drift sand to the heaviest clay. A rotation of crops that would suit well in one place would not be wise in another; therefore, it is plainly to be seen that because of the varied condition of the soils the universal adaptation of any one system of crops for the tobacco counties of southern Maryland would be precluded.

The light lands contiguous to the water courses, and to the Baltimore and Potomac railroad, are exceedingly favorable to the growth of peaches and other fruits. Peach culture would be profitable, and should enter largely into any system that might be adopted "to supersede in part or in whole the growth of tobacco." It might in such localities be made the largest interest upon the farm. It would involve but little labor, unless a crop of peaches matured, when it would pay to secure that labor. Peaches grown in connection with other fruits would be a wise change from the products now attempted each year.

In sections where canning houses may have been established, there is no question as to the propriety of advising that the arable land of the farm be given up to peas, corn, tomatoes and fruit. These articles will prove to be far more profitable than any crop now grown; their cultivation does not extend through so long a period as tobacco, nor is so much labor per acre required. They are quickly grown, and as quickly sold; and whilst demanding earnest work during the summer, they are out of the way with the approach of autumn, and leisure is permitted in the winter season for the accumulation of manure, and for cattle-feeding. Where therefore vegetables can be grown, let no one hesitate to do so; tobacco can never be equally as profitable, and winter feeding of cattle or sheep should be prominent parts of the system.

The introduction of factories for the preservation of fruits and vegetables in their green state, should be encouraged. The soil of Southern Maryland is well adapted to the growth of such articles, at less cost of production perhaps, than possible in the vicinity of Baltimore, where a stony and naturally sterile soil requires increased labor, and large expenditures for manure. Home markets everywhere increase the profits of the husbandman, and are therefore highly valued; the canning house is to sections remote from town and city such a market, and wherever established, they will beyond doubt, create a radical change in the rotation of crops. It is safe to predict that the culture of tobacco will not enter into that system.

There are other light sandy soils in this section too remote from water communication or railroad to permit the profitable culture of fruits for shipment, and where as yet there are no opportunities for vegetable production. For these localities it is difficult to suggest a rotation of crops in which tobacco must not continue to be the chief reliance for the owner's income. Such soils cannot be depended upon for the profitable growth of either grain or grass. The improvement must be rather in the mode of farming, than in the products. The yield of tobacco must be increased from 400 or 500 pounds to acre as now, to double that amount. The labor required for the larger yield is no more than for the smaller one, and this increase must be obtained by increasing the fertility of the soil.

Farm stock should be reduced to the actual requirements of the farm; grazing should not be attempted; a small permanent pasture might be provided for milch cows which should be supplemented by a liberal supply of rye and fodder, corn to be cut and fed in their green state; but all stock should be stabled at night, that as large a supply of manure may be secured as is possible. By these means, and by seeding down the field intended for cultivation in corn and tobacco the previous year with the cow pea, the productive capacity of these light soils will be greatly increased. The growth of peas will be heavy, will benefit the land much by preventing exposure to the heated rays of a summer sun, and will enrich it by the decay of stems and leaves during the winter. It is not advised to turn the green peas under in the summer, but rather to let them remain upon the ground until next spring, when corn and tobacco may be planted.

At present the "three field system" universally prevails upon these lands now under consideration. One of the requirements of that system is that a field be annually seeded down with clover, and the benefits expected from the clover are, first, that it shall provide pasturage for the farm stock; and secondly, that it shall maintain the fertility of the soil to enable it to produce successive crops; but experience has shown that the stand of clover is generally a sparse one, far insufficient for either purpose for which it was intended. To dispense with it entirely is the part of wisdom. Let the stock be reduced in number, a permanent pasture be provided, and make peas the substitute. A much larger yield of tobacco would result; and it is upon these sandy soils, enriched as much as possible, that the finest and most valuable tobacco can be grown.

Upon the heavy black loams and clays, which constitute so large a portion of the soils of the lower counties of this State, tobacco ought not to be grown. At best they produce a coarse dark variety of tobacco, which is not much sought after by buyers.

From the period when clover came into general use up to about 1870, these lands under its growth became exceedingly fertile, and yielded bountiful crops of corn, wheat and tobacco. During the late civil war grazing of stock for market was largely practiced, possibly owing to the scarcity of labor as well as to the high prices realized then for sheep, wool and cattle, whilst prudent farmers in other sections of the State were fattening sheep and oxen in barns and stables during the winter season. This disposition to overstock the farm prevails still to a great degree, whereas winter feeding is practically unknown. Either from this cause or some unknown one, clover has in the past decade failed to survive the first season of its growth. It has been carefully and annually seeded, but upon many fields no trace of it can be seen, and sorrel very largely takes its place. The land has naturally lessened in powers of production, but responds quickly from an application of manure, which fact evinces

very clearly that the rotation or system which admits of the largest amount of manure is that one which should be availed of for these lands, and, therefore, a reason in itself for the exclusion of tobacco. As has been seen, tobacco furnishes no food for stock, takes to itself a large portion of the arable acreage of the farm, which otherwise might be allotted to the culture of grain and roots for consumption upon the farm; and besides, its culture gives no time for a hay harvest. It returns nothing to the soil, at least in proportion to that which it has removed; it feeds nothing which in turn will feed the soil, and to its cultivation is largely due the present impoverished condition of Southern Maryland and her people.

The culture of grain and stock feeding must be mainly relied upon to restore the fertility of these lands. A careful preparation of the seed-bed, a liberal use of home-made manure, and timely seeding of the grain, will make wheat a profitable crop upon these heavy loams and clays, especially if sown upon a clover or pea fallow.

It is not deemed advisable that corn should enter more largely into the system than can be consumed at home, but as the sale of fat corn-fed sheep and cattle must be relied upon for the chief source of income, so as much corn must be grown as will be demanded for that purpose. Every effort must be made to secure a stand of grass, whether it be of clover, timothy or orchard grass. It has been clearly shown during the past year or two that whilst clover will fail to "catch" even upon some of the best farms in this section, a successful stand has been secured by a top dressing of stable manure upon poor lands.

Having secured a stand of grass, it should not be grazed or disturbed by the plow so long as it continues to yield a fair annual crop of hay; for hay for home consumption, for the production of beef and mutton, will be needed in large quantities; and until that is secured the growth of fodder corn must receive attention, as it will enable the farmer to substitute it for hay, and to permit him to commence the business of winter feeding, which must be the base of successful agriculture in this section at the present time.

At a small cost tobacco barns can be converted into suitable stables for either sheep or oxen. More convenient ones can be built where capital is to be had, but the tobacco barns can be used if demanded.

Wheat, corn, grass and stock feeding may supersede the culture of tobacco to the profit of the planter, and to the increased fertility of his property, as in this system of farming the workings of nature are largely imitated by the return to the land in great part of that which was taken from it.

An orchard grass pasture, or other permanent pasturage, along with an ample supply of hay and roots, will enable the farmer's wife not only to supply her table with plenty of butter, but also to have a surplus for sale. A market nearby will always be at hand so long as some continue to grow tobacco, for the tobacco grower rarely has a winter's supply of butter unless it be purchased. The same pasture, with hay and roots for winter use, permit a small flock of improved sheep to add by the sale of wool and spring lambs to the farmer's cash account; and, in a word, with time for other things than one crop, there will be found time to stop many leaks; and many sources of income, now deemed too small for notice, will be found worthy of thought, and profitable beside.

Having thus briefly outlined the products that may be found profitable and suited to the different soils and localities in lower Maryland, there are changes in the system of farming which are demanded. There are customs prevalent everywhere utterly inconsistent with improved agriculture, and which must be remedied. The habit of pasturing work horses during six or seven

months of the year, a practice unknown in Western or Northern Maryland, should be discontinued, as alike injurious to the land and to the animals. Clover in its young growth is no proper food for a work horse; it distends the stomach but affords no solid nourishment; and its second growth induces profuse slobbering, and is an unquestioned drain upon the animal's strength. But how often does it happen that the horse after a day's work is turned out at night to seek, not rest for the morrow's labor, but food where there is neither clover or grass of any kind in sufficient quantity to appease hunger and to maintain health and strength.

Experience in the large cities has shown dry food, grain, hay and fodder, to be the proper food for working horses; and nature teaches that the soil is benefitted rather by the shade afforded by clover and finally by its decay, than by the removal from the land of all that has grown upon it. Again this system of pasturage leads to trespass upon cultivated fields, and the damage sustained by almost every farmer from this source is annually large. It occurs most frequently when the pastures are poor by reason of drouth or early frost; but as farm fences are not always perfectly proof against a bad animal, the entire stock of the farm are frequently found to have spent the night in a grain field. Good economy demands that there be less of this in the future. A permanent pasture amply protected, a plentiful supply of food for animals confined there, which can be secured by soiling, if not otherwise, and the stabling of working animals will entirely prevent this loss from trespassing stock.

Better and more faithful laborers are needed throughout this section of the State. Those colored men who have remained since the emancipation constitute the bulk of the labor and expect the rewards of freemen as to compensation for service, and freedom to go and to come at pleasure, but demand the privileges which were accorded the bondsmen by their masters. The holidays at Christmas, Easter and Whitsuntide, which were accorded them as slaves when permitted by the work of the farm, they now demand regardless of the losses thereby sustained, whilst as freemen they insist upon holidays known in the State as legal holidays, including of course election day. Too often are these colored laborers devoid of the honorable desire to compensate their employers by earnest work for board and wages as per agreement. Rarely indeed do they evince interest in the work, and often are they utterly worthless. Why this is so, is an enigma not easily solved, but to a certain extent it is due to the poor incentive in the shape of wages given for their labor.

Tobacco requires cheap labor, and a man must be well paid to feel an interest in his work. The tenant system in vogue throughout Southern Maryland must cease ere any great change for the better will be visible in its farming. No other than the present rotation of crops, with tobacco as the chief product, will ever prevail so long as a large portion of its area is worked by tenants, who, with rare exceptions, are unskilled and uneducated. Holding only annual leases, they feel no interest in increasing the fertility of the land, and look to the present, not to the future, for compensation for labor expended. If disposed to try the culture of other products they are prevented by the terms of their contract, which demands a large planting in tobacco; and conscious that their portion of the crops grown must be taken to pay the cost of producing the whole, they look to their increased stock for the year's profit, and this of course to the further impoverishment of the soil.

The prescribed limits of this article preclude a more extended notice of existing errors in the farming of this section. They are not hidden under a bushel, but are visible

especially as to the stranger unaccustomed to them. The remedy cannot come all at once. It may be years before other practices will prevail here; the present customs are the natural sequences of slavery and comparative wealth, but the advantages of an easily worked soil and healthy climate will ultimately make Southern Maryland one of the richest sections of the State.

Sources of Nitrogen for Crops.

Messrs. Editors American Farmer:

It is long since I sent you an article on agricultural matters, and having no opportunity of hearing and speaking the English language here, it becomes more and more difficult for me to express myself; but an article in your January editions, "Do plants draw their nitrogen from the inorganic kingdom?" induces me to reply, and I leave it to your judgment whether it is suitable to publish it or part of it. For I recite matters not at all new, but I only relate such opinions and experiences as our philosophers and chemists have hitherto deemed settled facts. At all agricultural stations for experiments in our country, as well as in England and France, the greatest and most scrupulous exertions and experiments are made to learn the natural laws of vegetable life, and although many events of nature appear yet to be secrets to our men of science, yet I am of opinion that a mere practical farmer ought to be a little more cautious to set up his opinions, and ought not try to overthrow scientific investigations.

The writer of that essay signed A. P. S. does not deny the necessity of nitrogen for growing plants, but he is of opinion that plants obtain their nitrogen from the inorganic kingdom, as they do carbon, hydrogen and oxygen, and in sufficient quantity, so that no nitrates are needed to be incorporated in the soil. Nitrogenous manure appears to him but a stimulant, without any further success or utility.

Nitrogen is diffused all over and through our globe. Almost four-fifths of the surrounding atmosphere consists of nitrogen, free and unfixed, only mixed mechanically with oxygen, while all organic bodies and matters, whether belonging to the animal or the vegetable kingdom, contain nitrogen fixed chemically. As soon as these matters putrify, nitrogen appears partly combined with hydrogen, viz., as ammonia, or with oxygen, viz., as nitric acid. These compounds are suspended in the atmosphere, although in minute proportions they fall down with rain or snow.

With all the excess of free nitrogen in the atmosphere plants may starve for want of nitrogen, for by all careful experiments our scientific men have not succeeded in feeding plants with the free, uncombined nitrogen of the atmosphere. On the contrary, they have become convinced that free nitrogen is not a direct nourishment. Nitrogen only in connexion with hydrogen, that is, as ammonia, or in connexion with oxygen, that is, as nitric acid, is a true nourishment for the vegetable kingdom.

Plants take all nourishment either out of the soil in a liquid state by aid of their roots, or out of the atmosphere by aid of their leaves. The soil contains different nitrogenous ingredients; the atmosphere also, as said before, besides free nitrogen, traces of nitrogenous matters, ammonia and nitric acid.

To prove whether plants can live on the free nitrogen of the atmosphere, or of the inorganic kingdom, as your correspondent says, our scientists take either clean quartz sand, or common soil burned out so that all nitrogen is destroyed, set plants in that burned soil, cover it with a large glass bell and keep it moist with chemically clean water. The atmosphere within the glass bell surrounding the plants they purify of

all admixtures, so that only pure oxygen and pure nitrogen are within reach of the plant. The result is, and always will be, the plants cease to grow any more for want of nitrates. The same experiment made, but by adding a small quantity of nitrates, about $\frac{1}{500}$ th part of the weight of the soil—nitrogen in that form is taken up by the leaves and roots, the plant will begin to grow, will flourish, ripen and produce fruit. The same experiment repeated without depriving the surrounding atmosphere of its admixture of nitrogenous matters, be they either traces of ammoniacal gases or of nitric acid, will admit the growing of the plant even to maturity, but the plant will be but a very poor one. It keeps hungry all its lifetime, brings forth but few small grains, while when provided with $\frac{1}{500}$ th part of the soil weight of either sulphate of ammonia or Chili saltpetre, a plant will spring up rich, gross, luxuriant, will flourish and will bring forth fruit an hundred fold.

These experiments show that nitrogen is indispensable to the nutrition of plants; that they are not able to draw free nitrogen out of the atmosphere, but that they are able to absorb all ammoniacal or nitric matters suspended in a minute proportion in the atmosphere for nutrition. Who can doubt this experience when learned men by very careful performances repeatedly came to such a result?

The experiment of raising plants in a soil destitute of nitrates, but without depriving the surrounding air of all ammoniacal or nitric matters, may be easily executed by anybody. Take burned soil free of nitrates, plant and water with chemically clean water, the nitrogenous matter suspended in the air will appear insufficient to produce a sound, perfect plant, while otherwise, when a small quantity of nitrates is added, the plant will develop perfectly and bring forth rich fruit. Even the ammonia and nitric acid coming down by rain during the vegetation of the plant will be found insufficient—will not supply the want. Similar experiments were tried by setting young plants—for instance, an oat plant—in water only, saturated with all the principal nourishments for plants, viz., potash, lime, magnesia, some oxide of iron, phosphoric and sulphuric acid, with and without nitric acid. In all cases where the solution contained some nitrates the plant became perfect, produced fruit; where the solution was without nitrates the plant failed, or existed in but a poor, sickly state. So they have succeeded in raising and bringing to perfection land-plants without any soil, merely in a watery solution containing all necessary food. The watery solution is to be renewed once in a while.

When A. P. S. saw on a patch of land burnt out (that is, deprived of nitrates) a very luxuriant vegetation, and another patch rich in nitrogen covered with a rather poor vegetation, many other unknown reasons may have influenced that result. Suppose on the first spot the nitrogen is not all driven out by burning—at least, not out of the sub-soil: the plants may have found plenty of nitric or ammoniacal matter for their purpose. Or on the second field all the blood poured upon the soil was not in a soluble state, to be taken up by the roots of the plants. We can simply depend on carefully-executed experiments when all other admixtures and all hindering influences are kept away.

By the way, I will mention that when soil is burned the most mineral substances are changed into so soluble a state that they give direct food for plants. A sterile, turfy soil, for instance, is by burning changed at once to a fertile one, but generally merely for one harvest; the soil is then poorer than before. Nitrogenous matter is destroyed by fire and the soluble minerals are used up by one year's vegetation.

To return to A. P. S.'s article: I held to the chemist's ground, that horn, blood,

leather, feathers, make an excellent food for plants, provided they are mechanically and chemically, or by putrifying, transformed into ammonia or nitric acid. Further says A. P. S.: "Why should (natural) wild plants and clover draw their necessary nitrogen from the inorganic kingdom, and not wheat or rye?" In the first place, it is not proved—on the contrary, it is to be doubted—that they draw free nitrogen from the atmosphere. They are apt to inhale (to express myself so) the ammonia and nitric acid suspended in the atmosphere. They are more apt to do so than other plants, especially more than haulm fruits. This peculiarity of legumes and clover plants is not at all astonishing. Individuals of different species have different peculiarities. The power of fixing ammonia is heightened by strewing gypsum over the leaves of legumes or clover plants. Gypsum fixes ammonia and enriches the plant by it, which is an argument that even legumes and clover plants cannot spare nitrogen in the form of ammonia.

Allowing that ammonia and nitric acid suspended in the atmosphere in minute proportions are sufficient to nourish some species of wild plants, thousands of experiments made at chemical agricultural stations, and even on every farmer's soil, show evidently that those portions of nitrogenous matters within the atmosphere are not sufficient to produce a full wheat or rye crop, while it is the problem for farmers to produce on an acre of land the highest quantity and best quality of nutritious grain. This cannot be done without supporting the grain plants with a suitable quantity of nitrogenous manures. It is true every soil, even the poorest, contains ammoniacal and nitric matters, but as far as we know all these matters are of organic source, and will diminish by continued harvesting, so that a later vegetation will be in want of nitrogen and remain behind in its development when nitrates are withheld.

Some kinds of soils are indeed rich in nitrogenous matter. These are especially the turfy, marshy black soils. In this kind of soil the progressing decomposition of vegetable substances forms ammonia and nitric acid, generally abundantly enough for the growing plants. This kind of soil does not want nitrates from abroad, only phosphoric acid and potash. Some legumes seem to enjoy an extraordinary faculty of absorbing nitrogenous matters suspended in the air probably by their broad spongy foliage, and they have at the same time roots so strong and extensive, that they have the power of collecting and consuming all ammoniacal or nitric matters out of the sub-soil not within reach of other plants. I speak of *lupinus angustifolius* and *lutens*. Some years ago I mentioned lupinus in a letter to you, and was anxious to have that plant imported to the United States. Sown on poor light land it wants but once in a while a good shower to grow to a gigantic plant. In our country lupines are grown, plowed under to enrich the soil, and with almost infallible certainty a first rate rich rye or potato crop is secured by it. Even when lupines are gathered for seed, enough nitrogenous matter is left behind by residual leaves and roots to supply the following vegetation. For green soiling there is no better plant, not even clover.

It is observed that during a thunderstorm, when the flash of lightning strikes through the atmosphere, free nitrogen combines with free oxygen and forms nitric acid; the rain washes this compound down. This is the reason that thunder showers are of so great a service to vegetation. In a word, it is proved that plants are unable to draw free nitrogen out of the atmosphere. It is known that all nitrates within the soil are of organic source, and it is proved that the nitrates in most kinds of soils (turfy or marshy soils, containing great bulk of vegetable residues, excepted) is not in a soluble state sufficiently at hand. Therefore, whenever vegetation is

expected to grow perfectly and luxuriously, where full rich crops of grains are expected, the soil has to be supplied with nitrates, be it in the shape of stable manure or mercantile manure; or, by cultivating variably, clover, legumes, especially lupines; for the salts of nitrogen are not a stimulant, not only give plants a deep green color, but they are, in fact, an indispensable material for plants.

Now, last but not least, it is proved that nitrates, when given alone, prolong the growth of plants and delay maturity, so that plants have full time for development; whilst phosphoric acid, given alone, hastens maturity, so that especially on a warm soil in a warm climate plants have not time enough to enlarge their body fully.

Yours truly, E. WENIG.
Shönlake, Prussia, February 13th, 1882.

Virginia for Sheep—Jersey Red Hogs.

Messrs. Editors American Farmer:

Perhaps some of your readers will be interested to know what we of Virginia are doing to repair the ruin common to the Southern States at the close of the Confederate struggle. Not one of the seceding States was less responsible for that war, yet none suffered greater desolation. Of the 155 elected to the convention which ultimately passed an ordinance of secession, only 30 were avowed secessionists when elected, and nothing less than the call to war against her sisters of the South could have driven Virginia to secede. The doctrines of '96, the political creed of Virginia, recognize neither nullification nor secession. But I must not write of politics, not even of the past; my object is to say something of the agricultural condition of this portion of my State.

No part of Virginia has greater advantages than the portion of the State in which I live, midway between the capital of the State and that of the Union. Its soil, originally fertile, responds promptly to every effort at improvement; its climate, healthy; its surface, gently rolling, and not a valley to be found without its streamlet, fed by never failing springs of pure water. Three different railroads give us daily access to the markets of our own State and of all the Atlantic marts.

With such advantages it may well be expected that this favored land would be one of the first to repair its losses, and yet I am sorry to say that both our people and their lands seem to be poorer this day than they were at the close of that desolating war. True, there are exceptions; there are lands which are improving; there are farms well cultivated, some, perhaps, there may be, which are yielding a profit. But I fear that what I have said is strictly true, as to much the larger portion of this section.

Why is this so? There will be little difficulty in answering this question, yet the remedy may not be so easily pointed out.

Much of our land has been rented, rented from year to year; rented in many instances to black tenants, without the means or ability to cultivate properly. Cropped continuously without grass seeds or rest, the land has been rapidly exhausted, whilst it has yielded little profit, either to land, owner or tenant. Few, if any, of the black race who have attempted to become farmers have succeeded. Without benefiting themselves, they have been wearing out the lands, and each year of half and ill directed labor has proved them poorer than the preceding.

Gloomy as this picture is, I hope and I believe a better future is opening before us. Nature designed this country for a grazing, and especially a sheep grazing country, and such it is gradually becoming.

The red lands of the southwest mountains (and it is of them that I am writing) are naturally underdrained, and nature has thus done for them what in many highly cultivated sections can only be attained by a great expenditure of labor, but what every en-

lightened farmer must admit is essential to perfect husbandry. I have more than once drawn attention to this peculiarity and very great advantage. It cannot well be overestimated. A subsoil of very hard yellow clay underlies nearly all these lands. Fissures of very great depth split this clay subsoil, and the excess of rain water which would otherwise pass off, washing the lands and carrying their fertility with it, finds a vent through these fissures. During periods of protracted drouth this moisture may come back by capillary attraction, or the long roots of plants may reach it. Whatever may be the action the fact is obvious, that when everything is parched and withering upon different soils in this vicinity the fields here are comparatively verdant.

The surface dries off quickly—a peculiar advantage to sheep, as it is essential to their healthy condition that they sleep and graze on dry lands. Flat, oozy, boggy lands are sure to bring foot-ill and every other distemper to which they are liable. Consequently you never find a diseased flock on these lands, except where they have brought their distempers with them; and even when such is the case, unless it be in a very malignant form, it soon wears out. I hazard little in asserting that there are few, if any, portions of the Union so peculiarly suited to sheep.

Green sward or Kentucky blue grass (for they are the same) is the indigenous grass of the country, and as soon as our lands are brought to a certain state of fertility they naturally run into this grass. Let them alone and they soon attain that state, even without aid. If the plow could be kept off, and the lands moderately grazed, especially with sheep, the whole country would soon be covered with a rich green turf. This is no theory, as I can point to more than one field in this vicinity where it is practically proven. With this disposition to produce the best of all grazing grasses; with a surface gently undulating and always dry; with sparkling little streams in every valley, springs of pure water gushing out near the summits of the hills; with a healthful atmosphere, mild winters and rarely any extremes of heat in summer, you may well believe that this region is an elysium for sheep.

Two Englishmen, recently settled among us, have already imported, and will continue to import the best breeds of England, carefully selected, mostly as yet of the black-faced or down families, which rank first as mutton sheep; though if desired they will bring in other varieties; and several very large flocks of fine wool sheep have within the last few years been introduced from Pennsylvania. Our people seem likely soon to become growers of wool instead of planters of tobacco and reapers of grain crops; and this change can scarcely fail to add alike to the beauty, the fertility and the wealth of the land. One gentleman of this vicinity invested in 1879 and 1880 eight hundred dollars (\$800) in fine wool sheep from Pennsylvania. He has already sold sheep and wool for more than a thousand dollars (\$1,000), and has on hand more than double the number of sheep bought.

Before I conclude I must not omit to mention a splendid herd of Jersey Red hogs kept by a gentleman from England who settled in Orange several years since, and is one of our most diligent and enterprising farmers. Mr. Lovelock, the gentleman of whom I am writing, aided by his son, has spared neither care nor cost in getting on his farm the best breeders to be had from various herds in New Jersey. Thus selected, they come from six or eight different families, and in furnishing pairs, as usually called for, he is careful never to send the offspring of the same sow.—I doubt whether a herd so carefully selected can be found even in New Jersey.

I am somewhat surprised that more attention has not been given to this excellent

breed of hogs. Of late years they are becoming what they certainly deserve to be, the favorite breed. They combine more good qualities than any family I know of. I attach little importance to the extreme weights to which they have been forced, as there can scarcely be a profit drawn from such expensive and troublesome modes of feeding, but after watching them closely since my friend has been breeding them, now some two years, I am fully satisfied of their superiority. They are remarkably well raised and singularly prolific, even the young sows rarely bringing less than six, and those more matured as many as fourteen pigs—qualities in which most of the improved breeds have been found defective. They mature early, and seem always healthy. During my numerous visits to Mr. L'orelock, never omitting to examine his Jerseys, I do not remember to have seen a sick or even a mangy hog.

JOHN WILLIS, SR.

Orange Co., Va., March 1, 1882.

Notes on French Agriculture.

From our Correspondent in Paris.

M. Pasteur has lost no time in practically applying his important discoveries connected with the vaccination of live stock as a preservative against *charbon* and other maladies. He prepares the vaccine, and forwards it in bottles, sufficient for 50, 100, to 300 sheep; the doses for cows and horses are larger. There are first and second vaccines to be employed at an interval of a fortnight, and injected under the skin, by a Pravaz syringe. In the case of sheep, they are vaccinated inside the thigh; cows, behind the shoulder, and horses, on the neck, where the collar cannot rub. The syringe employed must be carefully washed after each day's use; the vaccine must be kept in a cool place, in a cellar, and a bottle once opened must be used. After being operated upon, cattle exhibit no tumor; sheep do, and horses largely so; no treatment is required for the pustules.

An extensive agriculturist asserts, he preserves his stock from peri-pneumonia, by hanging in the sheds planks coated twice a week not with coal but Norwegian tar; giving common salt and garlic liberally with the food; purging with castor oil, and employing lotions of camphored spirits.

M. Lemoine, an extensive poultry breeder, considers the droppings of fowls, if allowed to accumulate, as detrimental to the health of the birds and the profits they ought to yield. His poultry yard consists of several well-sanded alleys, covered at a moderate height with wire netting, and planted with fruit trees, terminating in a small paddock. The mortality of the fowls is twenty per cent. less, and the eggs one-fourth more numerous, under the new system. Farmers are urged to domesticate the *Cabiat* of South America, as ranking next to the pig and sheep. It is commonly known as the water pig, and resembles the squirrel in point of cleanliness and food. In three years it becomes as large as an ordinary pig; it eats little and sleeps much. The head is large, the ears small, it has two terrible cutting teeth, but no tail. When carefully fed, the flesh loses its objectionable oily taste.

A M. Georges proposes, that since meteorology cannot predict the weather for months in advance, and since the telegraph can, for forty-eight hours, farmers ought to club among themselves during the active seasons to receive weather telegrams from the observatory.

Nothing to record relative to the phylloxera; the battle between the invader and the invaded goes bravely on. Much interest has of late been displayed to discover the winter eggs of the insect. In the meantime several vineyards which had been destroyed by the ravages of the phylloxera are being replanted by American stocks, so that in five or six

years the vines will be flourishing like bay trees.

It has been said that a man could make his fortune by rabbit rearing. M. Bouvyer, of Chateaufort, near Tours, cultivates mushrooms in old quarries; manure and labor 1,100 fr. per month, gross receipts 8,000 fr., profits 6,900 fr.; he gathers about 150 pounds of mushrooms per day; the beds, composed of horse dung, after being sown with spawn from rabbits' excrements, send up the esculent in three months.

The Deer Creek Club.

A well attended meeting of the Deer Creek Farmers' Club was held at the residence of Mr. John H. Janney, Indian Spring Farm, Deer Creek, on Saturday, March 4th. Besides the active members, there were present a number of visitors.

In the absence of the President, Mr. Ball was called to the chair. The committee to inspect the buildings and premises consisted of Messrs. Wm. Munnikhuyzen, R. John Rogers and James Lee. In making their report Mr. Munnikhuyzen said the committee saw nothing to find fault with. Mr. Janney's horses, cows and young cattle look well. He has some fine Shorthorn heifers, a handsome yoke of oxen, and a remarkably pretty flock of Southdown sheep. Out of 45 lambs he had only lost two or three, and the lambs are the largest and best he had seen. The sheep looked well and had been fed no grain this winter. Mr. Janney's stock cattle also look well. He had made some improvements at his barn since the club last met at this farm, including a good substantial fence around his barn-yard.

Mr. Lee thought Mr. Janney made a mistake in not stabling his cattle, as he has room for all. He would have saved more manure and the cattle would have done as well if not better in the stable. Mr. Janney is making extensive preparations to engage in the canning business.

Mr. Janney said he had fed no corn to his cattle, and did not think they would have done any better if stabled.

The report of Messrs. Moores, Thomas A. Hays, and Castner, the committee appointed to draft a fertilizer law for Harford county, was made, and the proposed law read.

The report was accepted and the committee ordered to send the law to the Harford delegation in the Legislature.

Mr. Janney called attention to an article in THE AMERICAN FARMER in reference to the Maryland Agricultural College. The Club, he said, had made no recent expression of opinion in regard to this college.

Mr. Moores thought it wrong for the Club to condemn the college, when it knew so little about it. He thought an agricultural experiment station might be made of great practical value to farmers. He believed that the farmers of Maryland are as intelligent, enlightened and progressive as those in other States, and he did not see any reason why we could not have a well-managed and useful agricultural college.

Judge Watters moved the adoption of the preamble and resolutions as adopted by the Gunpowder Club. These condemn the management of the college, and oppose any appropriation to it by the State. He thought that from the fact that the college had received so much from the State, and so little was known about its working, it was evident that it had been of no service to farmers.

Mr. Janney thought that farmers get very little in an especial way from the State, and if the college can be made of any benefit the appropriation asked for should be made. He did not see why it could not be made a success, with proper management.

Mr. Samuel M. Lee said he had taken considerable interest in establishing the college. He was opposed to any scheme of wiping it out of existence. We should first endeavor to change the management, if the present

managers are not doing their duty to the farmers. He would not like it to go abroad that we cannot have as good and useful an Agricultural College in Maryland as those of other States. The following resolutions were then offered by Mr. Janney and adopted:

Resolved, That the Deer Creek Farmers' Club recommend that the Legislature withhold any appropriation from the State Agricultural College, until the said college is reorganized in the interests of the agricultural community.

Resolved, That we recommend the removal of the college to a more suitable location, and that an experiment station be established in connection therewith.

On motion of Mr. Moores, Col. John Carroll Walsh was unanimously elected an honorary member of the Club.

The following officers were then elected for the ensuing year: President—William Munnikhuyzen; Secretary and Treasurer—Alex. F. Hays.

The retiring President, Mr. Geo. E. Silver, and the newly elected President both made appropriate remarks.

The Club adjourned to meet at the residence of Messrs. S. B. and Geo. E. Silver, April 1st. The subject announced for the last meeting was continued to the next. It is as follows: "Soiling vs. Grazing; considered in connection with ensilage and doing away with inside fences."

Tomatoes—Growing and Canning.

We take the following from the Millford (Del.) *Chronicle*, one of our spirited country exchanges, which pays great and intelligent attention in its columns to farming topics:

This vegetable is mercurial in its nature and mercurial in its price. Nothing that is dealt in by men varies so much in price throughout the year and throughout every year as tomatoes. Year after year they are sold in the market at one season for a dollar per quart and at another season for ten cents per bushel. In their season they are readily grown in abundance with ordinary cultivation, and are consumed in immense quantities, which consumption is annually increasing.

As an article of food the canned tomato is desirable in most families, and at the retail price of ten or twelve cents per can is popular with the masses.

They may be canned in large or in small quantities with equal care. A cook stove will do equally as good work with a large steam boiler, quantity only need be the difference. Of course in this way, as in every other manufacture, the margin of profit is so close that quantity often decides the fate of the enterprise. But scores of individuals have utilized the labor of their own families in canning tomatoes, and have grown their own vegetables; with care they have made a reputation for their brand and remuneration for their toll that ought to stimulate many others to follow their example.

A still better plan would be for farmers to hire the factories to can their tomatoes at a fixed price per dozen, a condition that would make the business more permanent and establish brands of greater popularity, give a steady crop for the grower and bring him near the consumer with a large share of the risk of ordinary business and a consequent brightening of his wits. Such a plan would make the grower careful to produce the best tomatoes, and to avoid delivering to the factory any such as would create a loss. On this principle creameries and other factories are worked throughout the country, and there is no reason why canning factories should not be thus worked.

Six dollars per ton for tomatoes on contract has become distasteful to farmers from several causes, among which may be named the fact that the work of producing them is not bountifully rewarded by the price named; the contracting grower is often chafed

to see his neighbor without contract receive 25 to 30 per cent. more than he from the same factory, and because it sometimes happens that the canner makes a much larger profit from the fruit than the grower. Well, unless farmers are willing to take a portion of the risk we cannot see how the unpleasant conditions that exist can be removed. This business is often done upon small margin, and as said before, the narrowness of the margin necessitates the putting up of large quantities, if the year's work would not be given for naught; this demands large sums of money and involves heavy risks. Jobbers are willing to risk large sums on the probable market when backed by contracts that insure the supply. But these contracts from jobbers, whereby the money is obtained to carry on these great industries in our midst, are the autocrats that fix the price in advance. If farmers will combine to take the position of these jobbers, as is suggested above, each farmer continuing to own the product of his acre in due proportion to his neighbor until the time has come to market it, these will find the canner a less harassed man and their own profits proportioned to their risks. As the case now stands, the canner is entitled to a pro rata profit of four times as much as the farmer on money used in the process, besides a fair additional margin to insure against risk.

The cost of running an ordinary factory of 5,000 cans per day, also its receipts therefor, is as follows:

Superintendent.....	\$3 00
40 women, packing.....	40 00
6 men waiting on papers.....	6 00
5 women filling cans.....	5 00
3 women wiping cans.....	3 00
Cappers.....	6 00
Processors.....	4 00
Handling away.....	3 75
Testing.....	3 00
Fireman.....	1 00
Repairing leaks.....	2 50

Paid for labor.....	\$77 75
5,000 cans, at 3 cents.....	150 00
Fuel.....	3 00
Labels.....	10 00
Cases.....	24 00
Freight.....	11 75
Solder.....	4 00
5 per cent. paid for the use of money.....	19 25
Incidentals.....	5 00

Exclusive of fruit.....\$110 00
To fill 5,000 cans will require 12½ tons of good tomatoes.

Thus we find that the 5,000 cans have cost, exclusive of the fruit, 6 and 21-100 cents per can, or about 75 cents per dozen. We have yet made no account of the wear and tear of the factory or remuneration for the owner. The above calculation supposes the fruit grown under favorable circumstances and demands that each ton produce 400 cans without any allowance for loss. Every dollar paid on the ton of such fruit adds one-fourth of a cent cost to the can or three cents to the dozen cans. Hence, \$6 per ton makes an itemized cost per dozen of 93 cents. Now allow the canner one-third as much as the farmer, for the use of his factory and the risk in the business, and we have the necessity that canned tomatoes bring over \$1 per dozen before the farmer can hope for an increase of price. Every cent that the canner receives per dozen above this dollar is an addition of from 30 cents to 40 cents to the canner on the products of a ton, and consequently a sliding scale of risk may be arranged between the canner and grower, whereby the farmer receives one-third of the increase, or \$1 on every ten cents advanced in price. If growers expect a profit in the first ten cents above \$1 per dozen, they must expect to share also the risk in the ten cents that precede the \$1 per dozen. If they wish to avoid this risk they may yet take their stand upon the second ten cents of advance; that is, they may demand \$6 per ton, while tomatoes sell for \$1 per dozen cans, and \$7 per ton when tomatoes sell for \$1.20 per dozen cans. On this foundation there is no doubt the farmers and the canners will yet settle their difference. Careful estimation has placed the probable product of the coming season at 4,000,000 cases of tomatoes, or two cans of tomatoes for every man, woman and child in the United States.

Live Stock.

More Fine Jerseys for Baltimore County.

At the sale of imported Jersey cattle at Herkness & Co.'s bazaar, on March 9, Mr. F. Von Kapff purchased Fillpail Carlo, 14, 434, a fine heifer in calf, for \$550.

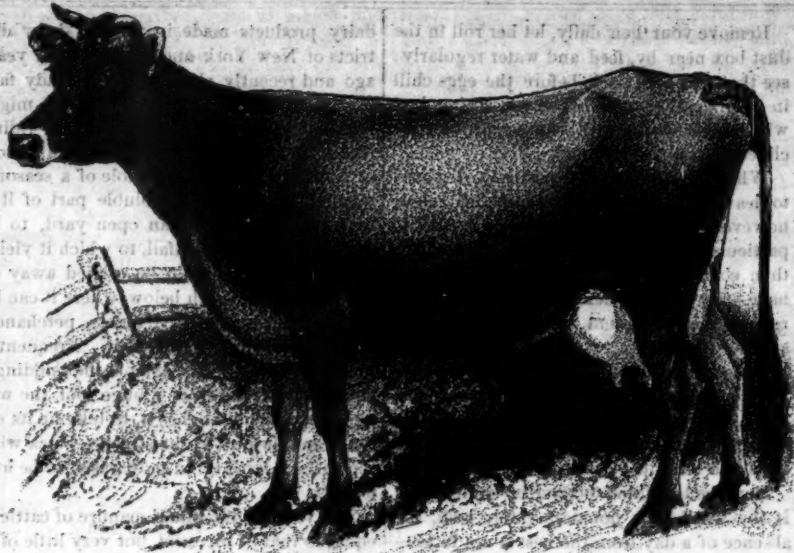
Messrs. Clarke & Jones purchased a beautiful heifer, one of the prettiest and best bred of the lot, for \$290—name, Carlos Juno, 14, 496; and for Mr. L. B. Purnell the beautiful heifer, in milk, Pride of Home, for \$280. This latter is a half-sister of Messrs. Watts & Seth's beautiful heifer Syren, whose portrait we published in our issue of February 15. These latter gentlemen, Messrs. Watts & Seth, purchased the same day at private sale, on private terms, bull Island Valeurs, 5,514, by Catona, and he out of Ona, the best of the granddaughters of the celebrated Coomassie which has yet appeared on the stage, having made 17 lbs. 4 ozs. in 7 days when 3 years old. They also purchased the imported cow Rosa, a half-sister of Ona, and said to resemble the old cow to a remarkable degree. She is in calf to a son of Rex, who is particularly strong in the Pansy blood, thus combining the three greatest families in the prospective calf—Coomassie, Pansy and Rex. Apropos of such a combination we will say that Mr. Von Kapff has a heifer, Cordelia Rex, in calf to Catona, above named, almost identical in breeding with the bull that served Rosa (being by Rex out of a Pansy cow), and Mr. Von Kapff we know refused a responsible offer of \$1,000 for Cordelia's calf if a bull. This will give some idea of the value of the blood being introduced into our herds.

Messrs. Watts & Seth have also purchased Holly Twig, 11205, the dam of Mr. Von K.'s fine bull calf Normanby 2d, 6235, exhibited by him at the State Fair last October. Holly Twig is a two-year-old of great beauty, and tested in September last during the very severe drouth, 2½ months after dropping first calf, gave 12 lbs. 13 ozs. butter in 7 days, and again the last 7 days in 1881, being then 5 months in calf, 8 pounds of butter. Her feed being one quart corn meal and two quarts bran twice a day.

Mr. Samuel M. Shoemaker has purchased from J. V. N. Willis, of New Jersey, the cow Grandiflora, an animal said to be of remarkable beauty, and with a record of 16 pounds of butter in 7 days. We are not informed at this time as to her breeding, but will refer to her again in our next.

Thorough Knowledge Necessary in Keeping Sheep.

There is money in sheep, but it is not every man who can get at it. He who embarks in the business must take with him those practical rules and administer them with the same discretion that is found necessary in every successful enterprise. In flock management, success will come only to him who brings to the business a practical knowledge of the sheep, its peculiarities, its necessities, its possibilities, and who supplements this knowledge with labor and discretion—as necessary here as in other vocations. The ability to detect evidences of unthrift and to counteract unfavorable tendencies, is worth much to the shepherd; but of far greater value to him will be found that experience and knowledge by which he will be enabled to escape the necessity for eliminating them. As a majority of the unfortunate ventures in sheep husbandry are the result of ignorance or neglect, the experienced flock manager is enabled to escape them, leaving the "bad luck" to fall to the lot of those who have acted without discretion. Men do not undertake merchandising, or banking, or manufacturing, in its various branches, until they have acquainted themselves with such of the details of the proposed enterprise as will enable them to properly perform the



Arawana Queen, 5365.

THE PROPERTY OF JOHN E. PHILLIPS, BALTIMORE, MD.

The subject of our illustration this issue, Arawana Queen, is the property of John E. Phillips, Esq., of Baltimore county. Her sire is Rex, 1330, frequently mentioned in these columns. Dam, Arawana Rose, 3810. Arawana Queen made 5½ lbs. butter in 3 days in winter when 3 years old, and has not since been tested. She is a cow of great beauty and stylish carriage, and her owner is justly proud of her. He has had to refuse large offers to retain her. She is one of the cows which were sent to Columbus, Ohio, to be bred to Cash Boy, and is believed to be safely in calf to him.

necessary duties, or at least to be able to judge when their employees do so perform them. No more should the man who essays to become a flock manager expect to find a short cut to the front rank. He may have money to buy as good animals as the country affords, and may surround them with all the auxiliaries that his imagination can devise, but without skill as a breeder and knowledge of what to do, and the time and manner in which they should be done, he will soon find himself distanced by some less assuming competitor, who has plodded over the paths which he has sought to avoid. Hard work and close attention are essentials to success in sheep husbandry; but these are so sure of reward that none need hesitate to assume them. Sheep will pay well for intelligent care, but this they must have if disappointment is to be avoided. — *Live Stock Jour.*

Complimentary to a Baltimore Co. Herd.

Mr. W. S. Shields, of Grainger county, Tennessee, in a letter to Mr. W. B. Montgomery, the Editor of the *Southern Live Stock Journal*, published at Starkville, Mississippi, thus refers to the Jerseys of one of our well-known Baltimore county breeders, and shows how wide spread has become the reputation of this locality for superior herds of this breed.

While visiting the herds of the most prominent breeders of Jerseys, in Baltimore, Md., in January, I met with a gentleman there who is a great admirer of Champion of America, his dam and his daughters, and who has secured from your breed, one of his sons to use as his breeding bull at the head of his very fine herd, and thinking it would not be uninteresting to you to know something of the herd to which a young bull of so much of Champion's blood is going to be the head, I write you some account of the cows composing it.

The gentleman in question is T. Alex. Seth, Esq., a prominent lawyer of Baltimore.

Mr. Seth resides on his farm the year round; is thoroughly devoted to his Jerseys, and one of the most thoroughly posted gentlemen, in all matters pertaining to Jerseys, I have ever met. His herd is small, but very select and carefully bred, and is handled with great skill. Mr. Seth is the fortunate owner of the celebrated cow, Arawana Buttercup (6052), a cow of wonderful quality and one

that has never been beaten in the show ring. She has given as much as 35 pounds at one milking, and has made 15 pounds 5 ounces of butter in seven days.

Mr. Hoover, of Ohio, the owner of Cash Boy, was so much pleased with Arawana Buttercup, that he induced Mr. Seth to let him take her at his own expense to breed to his bull.

Imp. Syren 2d, recently purchased at a cost of more than \$1,000, is a cow of remarkable beauty in color and form; is very promising.

The heifer calf, for which Mr. Seth paid \$425, when under one month old is an exquisite beauty, with greater udder development than I have ever seen on a calf so young. This cow and calf amply attest the superior judgment and taste of their owner.

Several other cows and young heifers of great beauty, good quality, fine escutcheons, yellow skins, all in excellent condition and health, make up one of the best herds of Jerseys of which I know.

There is a strong infusion of the blood of Albert, Splendid, Champion of America, Pansy, Alpha, Rex and Farmer's Glory, in Mr. Seth's herd, and as his future breeding bull, he is going to use exclusively the Champion of America bull from your herd, and as this young bull contains 75 per cent. of his sire's blood, Mr. Seth is very proud of being the owner of him, and expects fine results from using him on his best cows.

Restoring a Lost Teat.

Prompted by the desire to give others the advantage of any profitable experience that may happen to come under my observation, I have chosen THE AMERICAN FARMER as a proper channel through which to publish an experiment that I attempted and successfully carried out with a cow that had "lost a teat," or in other words, that had ceased to give milk from one of her teats. About a year ago the cow became fresh, and not having the proper attention, owing to my limited experience in such things; it was not apparent that she was not nursing her calf from the forward teat on the right side until the calf was removed, and then it was discovered that she was totally dry in this teat. No one seemed able to suggest any remedy, and thus the case was put aside, like too many others are with farmers, until to day, when I began reflecting upon the case. The cow, a very nice one, has recently calved, and upon my

attempt to milk her the same old trouble was apparent. Not a drop of milk could be drawn through the teat, though that part of the udder above the teat showed the natural appearance of distension. I was greatly disappointed, for I had hopefully looked forward to her next calf correcting the trouble, and hence the cow affording us a great deal of satisfaction. I reflected earnestly for some time about this trouble with my mind inclined to the impression that the conduit had become permanently closed.

It occurred to me, however, to probe the aperture and, if possible reach the milk reservoirs. So I took a new hair pin and tried to straighten it, but it broke. Then my wife took one with the same intention and succeeded admirably in producing an instrument perfectly adapted to the purpose. With this my young son and myself proceeded to the stable, where I had securely chained her cowship, and after touching the pin into a lump of tallow, I ran it up into the teat until it met with obstruction. I gently pushed it and it seemed to break through some delicate tissue and was again obstructed. At this juncture the cow became rather violent, and I was constrained to apply a plow line with a running noose round her back and with it take a half turn on a post several feet in her rear. In this way I succeeded in making her efforts to kick ineffectual. I had any amount of trouble, but by dint of sticking to it my son finally succeeded in penetrating through the more formidable obstruction and working the hair pin back and forth and milking her alternately. Finally she stood quiet and was entirely relieved. The result was very gratifying to me, both on account of the looks and profit of the thing and of the sufferings I imagine the cow must have endured. — *RUDOLPH WATKINS.*

Montgomery County, Md., Feb., 1882.

Barrenness in a Cow.

A subscriber in Talbot county, Maryland, asks the probable remedy for a Jersey cow, which, served by three bulls, remains barren.

The cause of the cow's sterility may be the result of some mechanical obstruction caused by injury at the time of parturition; or when being put to the bull. Again, it may proceed from general debility and lack of power in the sexual organs. Adapting the last theory as the most probable, I would recommend the following: Gentian, powdered, and Jamaica ginger, of each 6 ounces; sulphate of iron 4 ounces; fenugreek 3 ounces; mix and give one table spoon full in the feed; or in the mouth, twice a day. Feed the cow on generous strengthening food.

R. P. LORD, V. S.

156 Pennsylvania Ave., Baltimore.

Public Sales of Jerseys.

At the sale of Messrs. Hoover & Jennings on the 1st inst., at Indianapolis, 64 cows and heifers averaged \$170.86, and 6 bulls, \$306.66. The aggregate of the sale was \$12,670. The bull Cash Boy sold for \$1,030, and was bought by A. A. Gibson, Columbus, Ohio.

At Messrs. Herkness & Co.'s sale at Philadelphia, March 9, 21 imported Jerseys brought an average of \$331; 21 Guernseys averaged \$328; 53 Hampshiredown sheep averaged \$33 a head, and 18 Shetland ponies \$135. A note of the purchases of some of our Maryland breeders will be found elsewhere.

Dr. F. W. PATTERSON has arranged to sail in a few weeks for Europe, with the view of importing a herd of North Holland cattle for his farm in Baltimore county. This vicinity is becoming a centre for every kind of improved stock.

Mr. H. J. CHAMBERLIN, of Williamson county, Texas, had on exhibition, at the Atlanta Exposition, a very fine Merino buck fleece, weighing 41½ pounds. Vermont sheep men will be coming to Texas for their rams before many years. — *Texas Wool.*

Poultry Yard.**Keeping Poultry.**

Messrs. Editors American Farmer:

Will you publish in your next number, or as soon as you have space, some suggestions upon profitable chicken culture? Something seasonable, reliable and practical. My brain is confused and dizzy with the conflicting advice, verbal and written, which I have tried to follow. Experience is the best teacher, but it is an expensive one, requiring more outlay of cash and patience than I can command.

Please ask some of your subscribers what has been proven to be the best breed, not for ornament, but that will pay the best, and the most tried and approved manner and matter of feed for young and old. You will secure my everlasting gratitude and new subscribers on the EASTERN SHORE.

REPLY.

The questions asked by the above subscriber, if answered in detail, explicitly, would be not only quite a task, but occupy a great many columns in THE FARMER. Almost any breed of poultry can be reared profitably if the necessary rules are observed, which are not any more difficult than the carrying on of any other branch of business successfully. Energy, determination, patience, perseverance, must be some of the characteristics of the man or woman who intends to follow chicken culture. I judge from the penmanship, the writer making the inquiries is a lady. So much the better, for they are sure to be successful for the very reason that they are quicker, not only to perceive, but to attend to little essential details that men naturally overlook.

Considerable experience with the majority of the different pure breeds and experiments in crossing have settled in our minds that were we to select now what we should consider the most profitable breed, we should use Houdan hens crossed with either White or Brown Leghorn cocks. This cross not only makes an extra good laying one, but the chicks are exceedingly sprightly, very rapid growers, are feathered very early, and their superior table qualities would be recognized by the most fastidious epicure. Their eggs are large, pure white and good flavored. The progeny from the cross should be bred to pure bred Houdan cocks or Leghorns—a good plan being to alternate. Regarding food, I need only say the old adage, "variety is the spice of life," is very applicable in this case, and pure water a necessity at all times for fowls. I will add, I have found it paid, both as regards economy and the health of the fowls and chicks, to always mix the corn meal with scalding water—winter and summer—and to always use only the best food; damaged corn or other grain should never be fed to poultry. We should be pleased to hear from others, giving their experience.

G. O. B.

Advice Regarding Sitters.

Consult the hen's natural wishes on the subject of position, locality, etc., in making her incubating quarters, and it will be much better for all concerned.

Furnish sitters with new, clean nest-boxes. Set them upon a good thick grass turf (at bottom), put a dampened newspaper under this, and form the nest of clean, short hay or straw. Scatter powdered sulphur among the latter and through the hen's body feathers the last thing before she is placed on duty. Be careful that your eggs are fresh, sound and not chilled. Nine to eleven to a sitting if it is cold in the season, are better than thirteen. The hen will cover these more securely, unless she is a very large one; and medium-sized hens for incubating purposes are the best at any time.

Remove your hen daily, let her roll in the dust box near by, feed and water regularly; see that she goes back before the eggs chill in cold weather, and cover her sitting box with coarse bagging if she seems half inclined to give up her work.

When the mother is persistently disposed to leave her thus partly-concluded labor, however, she should be watched carefully, particularly when her nest of eggs is more than commonly valuable or costly. If you have other broody hens ready it is well to remove the delinquent, and give her task to another to finish.

As to the result of such neglect, if the eggs have been steadily sat upon over ten days, there will be no trouble about their hatching, though a day or two longer, time will be required to bring the chicks forth.

Don't be to willing too give up chilled eggs. If the weather is not desperately cold, the absence of a day from the nest is not fatal.—*American Poultry Yard.*

Hints in Season.

We are not likely to be troubled with freezing weather now, and drinking vessels may be left out at night; but they should be filled with fresh water every morning, and all feed boxes should be kept perfectly clean.

Take good care of the young chicks, feeding generously on good, sound food, and as often as every two hours for the first ten days giving bread crumbs mixed with hard-boiled eggs, after that cracked corn, and wheat and oatens grits, keeping them out of the wet grass in the morning until they are four weeks old; be careful to give only what will be eaten up clean each time.

If your young chicks are running with large fowls, make a covered slatted feeding place, about eighteen inches high, and place the slats so close that the large birds cannot get in; and your chicks will soon learn to go there for their food, and will suffer no annoyance from the other birds.

We again call the attention of our readers to the disease called roup; there are different stages of this pest of the poultry yard.

Be careful to keep your birds from the wet and cold runs. Give chopped onions, charcoal twice a week. A little tincture of iron in the drinking vessels (one teaspoonful to two quarts of water), and occasionally a little cayenne pepper, as a stimulant, will be useful.

The disease begins often with difficulty in breathing, then the nostrils become filled with mucus, the eyes and face become swelled, the throat fills with canker, and it becomes difficult to cure.

By following the above instructions, when you first discover it, in nine cases in ten it may be prevented and the bird saved.—*Ill. Jour. of Agr.*

The Dairy.**The Excrements of Animals in the Dairy.**

The excrements of domestic animals, says the *National Live-Stock Journal*, are an important element in every department of live-stock, but in none more so than in that of dairying. The whole of the annual vegetable growths upon the dairyman's broad acres are consumed by his animals and converted into manure. The heavy draft which the production of these crops yearly makes upon the original store of plant food, which untold ages has accumulated in the soil, would soon become exhausted if the crops which have absorbed it had been gathered and converted into waste, were not returned to the depleted fields to balance the draft. If this was promptly and fully done every year there would seem to be no good reason apparent why otherwise well-managed dairy farms might not maintain their fertility indefinitely. But for some reason they do not. Facts gathered in regard to the amount of

dairy products made in the old dairy districts of New York and Ohio, several years ago and recently, show a pretty steady falling off in the annual returns. One might reasonably anticipate this from riding through the country where almost any sort of cows are kept. The whole of a season's manure—that is, the insoluble part of it—may be seen lying in an open yard, to be soaked with every rainfall, to which it yields its soluble elements, to be carried away or soaked into the earth below, where it can be of no benefit to anybody, unless, perchance, to some enterprising antipode. Frequently piles of it lie directly against the buildings, and under the eaves of a huge roof, the water from which drenches it, to take up its essence and flow away in streams black with the basis of fertility, in most cases, to be lost forever.

The value of the liquid manure of cattle is equal to that of the solid, but very little of it is ever utilized. It is a rare occurrence that any special preparation is made by dairymen to preserve it, and the consequence is, that the bulk of it either drips through the stable floors to sink away out of sight, or is washed off into some stream or gutter, with the steepings of the solid droppings. Thus all the urine and half the value of solid manure of the foddering season are often squandered away, with little or no thought from the proprietor, he being satisfied with lugging to his fields a great and heavy, but low-valued bulk of fibrous matter and water. The droppings while grazing are better utilized, because they take care of themselves.

The growing deficiency in productions, when it is discovered, is seldom charged to improvidence in the care and economy of manure. It is charged to what is carried off in the milk. The loss of plant food from this source is not to be overlooked. It occasions a steady drain, which in time amounts to a considerable sum. A cow giving 4,000 pounds of milk in a year, takes from the soil into her milk—if we estimate 1 per cent. to consist of fertilizing matter, which is a high rate, as the ash is only about seven-tenths of 1 per cent.—forty pounds of fertilizing matter. Her urine, estimated by Prof. Johnston at 13,000 pounds a year, has 7 per cent. solid matter, which is nearly all fertilizing matter, though not all ash, and amounts to 900 pounds a year. Both are valuable for enriching the soil—milk abounding in phosphates and the urine in nitrogen—but, when the latter is wasted for half the year, or its nutritive matter for plants not returned to the fields from which it was extracted, it occasions much the greater depletion.

If milk was worked up into butter or cheese on the farm, and only the manufactured products carried off, as was the practice before butter and cheese factories came into use, there would be no necessity for impoverishing the soil by the business of dairying, if the manure and waste were husbanded and returned to the soil. There is nothing which comes from the soil carried off in butter, and a farm carrying a skillfully managed butter-dairy, ought to grow richer and more productive. The drain from selling cheese from a farm would be something, but it would be too small to become a source of depreciation if everything else taken from the earth was returned to it. The milk of a cow, giving 4,000 pounds a year, would make 400 pounds of cheese, which, after deducting the salt which had been added to it, will yield less than 20 pounds of earthy matter. It would not take three pounds to the acre out of the land it was derived from. There are various other little sources of loss upon a cheese dairy farm, as upon every other, which take something out of the soil; a few calves, or other young neat stock, or pigs, or poultry, or beef, etc., etc., each carrying off a little mineral matter in their bones and flesh, help to swell the loss; but the sum total of them all is small and too insignificant

to make a sensible depreciation in the fertility of a farm in a lifetime, if they were the only avenues of loss. There can hardly be a doubt that the annual increase of available plant food in the soil from the action of the elements upon the otherwise insoluble compounds of which the surface of the earth is composed, would, by the exposure of ordinary culture, more than make up for all such losses combined.

It is even a question whether this increase of richness from the steady solution of inorganic materials upon which plants feed, would not be equal to the drain when all the milk was taken off the farm, as it is when marketed in towns or sold to manufacturers. But in whatever way the mode of dairying has been carried on, dairy farms, after a few years of exclusive devotion to the support of cows, generally begin to show signs of depreciation, occasioned, it seems clear to us, from a waste of manures, which is the result of a defective appreciation of their value, and a want of proper attention in saving and applying.

But the cause of depreciation, from whatever source it may come, should be perseveringly studied and investigated till it is clearly understood, for not until the cause is known can the dairyman direct his efforts intelligently or effectively in trying to obviate the effect. The thinking and observing dairyman may need no hint from us, but in riding through the dairy sections of the country, we cannot avoid the impression that there are few dairy farmers who do not need to be reminded of the value of the immense productions of animal waste all the time forming upon their premises, and of the propriety of looking more closely to the application that is made of them. When the sources of loss are discovered and appreciated, they will prove their own remedy.

Horticulture.**The Plum.**

An Address before the March Meeting of the Potomac Fruit Growers' Association, by Dr. G. F. NEEDHAM.

The *Prunus Rosacea* of the botanists is a native of Southern Europe and Asia, though there are some varieties indigenous to the United States—the Chicasaw, Wild Red or Yellow and the Beach plums.

The climate and soil of our Middle States are admirably suited to the production of this fruit, and many of our varieties surpass in beauty and flavor the finest plums of England or France.

Plums make a beautiful dessert fruit, and eaten in moderation when perfectly ripe are quite wholesome. The plum should be allowed to become fully ripe before being picked, and the fruit will be finer as the tree has a more sunny exposure.

For the kitchen the plum is universally esteemed for tarts, pies, sweetmeats and canning.

One of the most important uses of plums is to dry them and thus make the prunes of commerce. The varieties best adapted will be mentioned further on; and what with our improved dryers and varieties of superior flavor it would seem that we could easily compete with the prunes of France, which are now exported to all parts of the world.

The plum is most easily propagated by sowing the seeds of any free growing variety (avoiding damsons), and budding these stocks in midsummer when they are two years old.

Standard cultivation is the universal mode in this country, as the tree is one of the hardiest. Very little pruning of this tree is needed, merely thinning out the crowded heads and cutting away the cross branches. A clay loam is naturally the most favorable soil for this fruit. Trees planted on sandy soils will blossom, but will bear but little fruit. Salt is found to be one of the best fer-

tilizers of the plum tree, it greatly promotes its health and luxuriance.

The chief obstacles to cultivation of the plum are two, the black knot and the curculio. The former is extirpated by cutting off and burning every branch and twig that is affected. The curculio may be destroyed in various ways, but the jarring of the trees in the early morning and catching the insect is the most efficacious. In order not to break the bark some saw off a limb and rap smartly on the stump, but the best way is to drive a large nail into the upper trunk and strike briskly on this. It is well to repeat this daily jarring for some weeks.

As to varieties, I name only such as are vigorous, productive, and best in the order of their ripening.

For Dessert and Cooking.—Cherry, Golden Cherry, Drap d'Or, Early Prolific, Pond's Seedling and Imperial Ottoman.—*July.* Columbia, Criegee's Scarlet, Denniston's Red, Denniston's Superb, Green Gage, Imperial Gage, Imperial Purple, Jefferson, Lawrence's Favorite, Red Gage, Smith's Orleans, and Washington.—*August.* Coe's Golden Drop, Coe's Violet, Howard's Favorite.—*September.* Coe's Late Red.—*October.* Winter Damson.—*November.*

For Prunes.—Domine Dull, Early Yellow Prune, German Prune, Manning's Long Blue Prune, St. Catharine, Prune d'Agén, etc.

Every one should plant at least a few trees. To any one sending me a postage stamp (to prepay answer) I will send information as to the best sort of plums, etc., for any State or Territory.

Strawberry Culture.

Fruitland Grange, Delaware, has a committee on fruit, which recently presented a report on strawberries, which was afterwards discussed by the Grange. The committee said winter mulching was useless work, a method employed when strawberries were supposed to require petting like greenhouse plants; and that they would say, if anything, that fall covering is an injury. They added:

"As regards early fruit, the berries will ripen earlier without this winter covering. When mulching time comes, which we believe is from the present time to the middle of March, we would advise manuring at the same time. If applying fertilizer, apply before you mulch, but the most profitable and cheapest way is to use stable manure. Mulch and manure at the same time. For this purpose there is no better manure than the dairyman's stable manure, when there has been no clover fed to the stock, to be applied coarse, as fresh from the stable as possible and put on liberally, yet so as not to smother the plants. To cover all the ground is best, but if the plantation is too large for the manure pile then follow the row only. We say dairyman's stable manure from the fact that where feed is used to produce the greatest quantity and the best quality of butter, such as cotton seed meal, wheat bran and ground corn, that manure, if applied right, will produce the greatest quantity and the finest quality of strawberries. The strawberry requires a manure that is rich in ammonia, and this you will find where bran and cotton seed meal have been fed. The manure from cotton seed is found to contain a per cent. of ammonia superior to bone meal, worth forty-four dollars (\$44) to the ton of cotton seed fed. Therefore ammonia being what the strawberry requires, and the manure from stock fed as above described containing a higher per cent. of ammonia than the majority of other manures or fertilizers, not excepting bone meal, which is the best artificial fertilizer, we would say apply the stable manure, or if not wanting to receive a double value out of your cotton seed apply it direct, as a fertilizer. It contains in this stage a per cent. of ammonia worth (according to Prof. Wolf's tabulated statement) forty-four dollars (\$44) per ton. We think the

method just described, both as mulch and manure, is the most economical both in money and labor, and will produce the best results. Pine chats and bent hay should only be used for mulching when you cannot do any better, and only to keep the berries clean; these can be applied any time before the berries ripen. The next point we would consider would be the kind of soil and preparation for a plantation. The best soil is a sandy loam, with a slight incline—an incline, from the fact that on a level plot, the water is more apt to lie and the plants are more apt to heave out during the winter, and it is likely to be underlaid with hard pan, or heavy red clay, when it should be an open subsoil. The plot should be as free from weeds and grass seed as possible, which can be obtained by tilling a few years before in corn or vegetables. In no case use a fresh clover sod. The soil should be well manured, heavily limed, ploughed deep, thoroughly pulverized and rolled until well packed and as fine as a mole hill. Run rows with a small, shallow plow three and a-half feet apart; plant, about first of April, all varieties, except Crescent Seedling, eighteen inches in the row; Crescents two and a-half feet in row. Two men and a boy should plant two acres per day, or ten thousand plants to the man, the plants being dropped by the boy. This work requires good help and even then it wants a good overseer. The plants want to be set firm with the roots straight. The test of a firm correctly set plant is, when you can pull off a fresh leaf without raising the plant. We consider the starting of a plantation the most important part of the culture; if properly done, good results are almost sure to follow; if badly done, your future work amounts to but little."

Bro. Bancroft: Will the committee please state how they keep roots of plants straight when setting in shallow furrows, and how to apply the dirt and how firm.

Bro. C. G. Brown: The roots should be straightened before setting, and great care should be exercised so as not to have them doubled when the soil is applied and pressed firm by hand, which is not at all difficult to one understanding the work.

Bro. J. G. Brown: There are many ways of setting plants, but the one which was the most expedient and the cheapest and yet insures a good stand was the mode which should be adopted. My mode of planting is to run a small furrow, then set plants against the firm or land side of furrow, holding plants with one hand while with the other the earth is applied and pressed to make it sufficiently firm. This is the plan adopted by most of the large berry growers of New Jersey, and after having tried many of the different modes of setting out strawberry plants they have adopted this mode as being the best and cheapest where plants are being set on a large scale. Think 10,000 plants too much for one man to set in a day; 5,000 enough for me, to have it properly done.

Bro. Bancroft: The committee have not told us what they would do with plants whose roots were eight inches long when they only had a six inch furrow to set in. How will you set them and still have the roots straight?

Bro. C. G. Brown: Should straighten out in rows where depth of furrows was not sufficient to permit the roots to be put straight down, but thought that we seldom find eight inch roots on strawberry plants used for setting.

Bro. Bancroft: Have had strawberry roots by actual measurement eighteen inches long; nothing unusual to have plants with roots eight inches long; was opposed to spreading roots in row, thought that they ought to go straight down; found that he did not have near as many plants killed by careless hoers where they were set with roots run straight down as where they were spread in the row;

also thought he was more successful in getting a good stand, and made better plants; liked them set low enough so that the crown of plant is at least one inch below the surface.

Bro. Ficar: Would inquire whether any brother had any experience in cutting off roots. This has been tried by several of the brothers with good results.

Bro. Allaband: Preferred setting strawberry plants with hoe on account of it being the quickest and easiest mode of doing it, and less danger of having the working improperly done; used a small hoe made for the purpose with handle about two feet long.

On motion, further consideration of the report was deferred to hear the report of committee on cooking, as this committee had been specially requested to offer a report at this meeting.

The Levy Late or Winter Peach.

It is fitting that more information should be laid before fruit culturists in reference to this wonderful fruit, so I copy from the Records of the Potomac Fruit Growers the following statements:

"This magnificent peach originated in Washington, D. C. The fruit was first exhibited before our society, at their November meeting, 1878, when it was unanimously decided by the pomologists present 'to be the finest fruit of the season ever exhibited on our tables.' Very handsome, of the largest size, round, with a suture on the side; yellow, with a delicate crimson cheek on the sunny side; flesh firm, juicy and sweet; ripening very late. The fruit picked before the heavy frosts will keep into November.* Like most clings it will reproduce itself from its seed.† When exhibited as above the name of Levy Late (or Winter) was given.—Buds from this tree having been sent to the State of Kentucky, a nurseryman there has propagated and sold the trees under the names of Gen. Washington and Henrietta.—For the Middle and Southern States this fruit cannot be too highly recommended as one of the largest, best paying, and therefore most desirable of peaches."

A basket of these peaches was sent to Gen. Grant last November. He acknowledged their reception as follows:

"Many thanks for the basket of the finest peaches I ever saw in my life."

G. F. NEEDHAM.

Washington, D. C., March, 1882.

About Strawberry Crates.

There has been quite a stir among small fruit growers near Baltimore recently, in reference to some plan for protection against loss of strawberry crates. For want of some good system there has annually been great loss to our small fruit growers. Heretofore the rule has been to sell the berries to any one who would pay the most for them, be he huckster, Arab or shipper, without requiring any security for return of crates and boxes. The result of such a loose system has been to greatly discourage berry growing, because of failure in the majority of cases to return the crates; and as each crate with boxes complete cost from \$1.25 to \$1.50, some idea can be formed of the evils of the system. The Grange is taking the matter in hand, and it is to be hoped that all engaged in the business will co-operate.

A meeting of berry growers and commission merchants was held at Wagner's Green House, Baltimore, March 4, to consider some system for the better protection of the growers, and an adjourned meeting appointed for the first Saturday in April to settle the matter. It is claimed that the shippers, no matter how valuable they may be to the grower, has no right to work upon the latter's capital.

*Subsequent experience shows that the fruit will keep into December.
†A seedling from a pit of the parent tree was sold not long since for \$200 to a nursery firm.

as they have been doing heretofore. The shipper after pocketing his profits concerns himself but little in regard to returning the empty crates, and frequently the grower has been obliged to send on and prepay freight on his crates wherever he could hear from them, sometimes hundreds of miles away. The hucksters selling the berries in market (except in rare cases) give the boxes away with the berries to encourage the purchaser, and if he does not dispose of the empty crates leaves the grower to hunt them up. The street Arabs are no better, rather worse, many making it their business to sell both boxes and crates. Packers allow the boxes to be scattered under foot, better skelter, about the yards for kindling wood for hands or engine.

An effort is being made by those having this new movement in hand to require a deposit of \$1.00 on each crate as security for its return in good order. This at first thought seems a very easy and simple matter. It is the rule in most every other city throughout the country, and needs only to be introduced in Baltimore to render it popular. The grower under such a system would be greatly benefited, and could well afford to pay an increased commission on the berries sold. Many objections, however, are urged by both commission men and growers, as is usually the case with every movement in the interest of reform; but these are chiefly of a selfish nature, prompted by greed or a fear that it will not work well, notwithstanding the success that has attended the system in other cities. The selfish class referred to contend that if A sends his berries to market without requiring from his commission merchant a deposit on the crates, he will have a better show than his neighbor B, who does require it. Still others contend that the increased prices paid by the shippers and dealers for berries upon which no deposit is required will pay for the lost crates. This we consider poor logic, careful at the bung and wasteful at the spigot, for while the demand is good this sometimes happens, yet during a glut with but little demand a double loss is sustained to the grower by the present loose system. It is to be hoped that fruit growers generally will co-operate in this movement, and thus help to materially lessen the burden of expenses to fruit growers.

R. S. C.

Forcing Tomatoes in Winter.

A friend wishes to know if there are to be no more articles on the use of glass in market gardening, as he is interested in the subject.

The subject is by no means exhausted, and my articles were mainly intended as suggestive to practical men of a means for meeting the Southern competition. I have been making some experiments this winter in forcing tomatoes under glass, both in pots and planted out in the house. I am inclined to think that for early fruit ripening, say from middle of January to March 1st, pot culture is the best, but when a hothouse can be entirely devoted to tomato forcing more fruit can be had from plants grown on a bed of earth over the hot water pipes and trained up the roof like grapes. In this way they should, I think, be planted two feet apart and trained straight up with a single stem. The plants I grew in pots during the past winter were from cuttings rooted in September. These were potted in three-inch pots, and as soon as these were filled with roots were stuffed into six-inch pots, in which they have been fruited. My first ripe tomato was cut on January 31st. The plants did well during February, but by March 1st, were quite starved and exhausted. If they had been shifted or matured with liquid manure they would doubtless have grown vigorously, but I had room for them no longer and did not care to encourage them.

A house full of tomatoes in pots I am satisfied would be a paying investment for the

market grower, in fact I believe they would pay better at present prices than cut flowers.

Passing through the flower garden late in September my attention was drawn to what seemed to be a weed in a flower bed. On examination I found it was a vigorous seedling tomato plant. I lifted it and planted it in one of the houses on the edge of a bed of smilax, it was trained up during the winter and grew rapidly, but did not set fruit early like the plants grown from cuttings. It is now (March 9th) over eight feet high and has about fifty tomatoes on it, which will probably ripen from April 1st on. It is still growing with remarkable vigor and sets a cluster of fruit for about every six or eight inches of growth. I have no doubt if it is cared for and protected from spiders it will continue to fruit all summer. This plant has been grown in a bed without bottom heat, and until it attained its present height was a good distance from the glass in a temperature at night of not more than fifty degrees. If it had been planted close to the front of a house and trained up under the glass in a night temperature of sixty degrees it would perhaps have come in as early as the pot plants, which never were subject to a lower heat than sixty degrees. The plants grown in pots were Acme, the plant grown in the bed was a volunteer seedling and may be a later sort than Acme, but the green fruit resembles Canada Victor.

Another winter I propose to grow enough tomatoes in pots to keep a supply of the fruit from January to March, when the necessities of our flower garden require every inch of our space for bedding plants.

I believe the time is not far distant when tomato houses will drive the poor watery tomatoes from Bermuda out of our markets, as any one who once eats a fine Acme grown under glass will hardly want the Bermuda and Southern stuff at one-fourth the price.

My articles, as a series, on the use of glass in market gardens have been concluded, but the market gardeners are but waking up to the possibilities of profit under glass. They do these things better in Boston now, and as our Norfolk and Anne Arundel growers compelled the Boston growers to take advantage of glass, so the Bermuda and Florida folks will compel the Anne Arundel men to learn from Boston the fortunes that await them under glass. Why it was not many years ago that Boston growers shipped frame lettuce to Baltimore! Baltimore growers learned the value of frames in lettuce growing and in forwarding melons, etc. And it will not be long before greenhouses heated by hot water apparatus will be considered essential to every market garden.

Hampton Gardens. W. F. MASSEY.

Vegetable Notes.

The arrival of THE AMERICAN FARMER for March 1st reminds me that it has been a long time since I contributed anything to its columns. My corner has doubtless been filled by more capable pens, but the exceedingly suggestive article from your Spring Grove correspondent, Mr. Watson, whose head is remarkably "level," notwithstanding his residence, has stirred the old scribbling spirit within me. I agree with Mr. Watson that we are surely entitled to a productive season this summer. The past two summers were so dry that the manure applied was not dissolved so as to help plants, but surely we have had water enough in the ground this winter to render all that is left soluble.

In regard to wintering celery, it has long been the practice of many, if not most, of the Boston gardeners to secure their celery crop in a pit made in the following manner: They excavate a pit about eight feet wide, as long as they need, throwing the earth from the excavation on each side. Then through the centre of the pit a row of posts is set to which a ridge pole is nailed. The celery is packed in the pit tightly in the

same manner that the New Yorkers fill their ditches with it. When filled, boards are cut long enough to reach from the ridge to the sides of the pit. The earth from the excavation is banked over the roof so as to exclude frost, but the ends are left with a loose stuffing of straw until the weather gets severe, when they are boarded up and banked. I tried this method once and found that, in our climate, it will be necessary to add posts and a light plate to support to the lower edges of the boards, as, in my case there came a soft spell with heavy rains, in January, and the sides of my celery pit gave way, letting the whole roof down in a mass and causing the loss of some thousands of celery roots. With the addition of a board at the sides to prevent this disaster, I think this is the most perfect and convenient plan for wintering celery grown in rows. The boards forming the roof of the pit are not to be nailed, and the whole thing can be uncovered and the lumber stored away to dry in summer.

From my experience last summer I am inclined to agree with Mr. Watson that flat culture of potatoes is best in our climate. I had a patch of Beauty of Hebron potatoes, that during the favorable weather in early summer grew with such wonderful rapidity that it did not receive the final earthing up with the plow which our other potatoes received. The result was a crop of potatoes from a small piece of ground that measured so many bushels that I have almost feared to tell visitors the amount for fear I would not be believed. In fact, but for this plot of ground, less than one hundred feet square, we would not have had potatoes enough to supply us till Christmas. The variety, of course, may have had something to do with it, as I find the Beauty of Hebron one of the most productive sorts, and it has the further advantage of making very few small potatoes.

As to growing lettuce in frames without mats, Mr. Watson may rest assured that it can in our latitude be done with ease, provided always that the frames are well aired and the plants not allowed to grow fast and get tender until February, after which date the frames may be kept a little closer. In our framing ground here, all our frames are provided with tongued and grooved shutters which are regularly used. Outside the frame yard and in more exposed situations, we have a number of frames for which we have no shutters and on which no covering is used. In all these frames the principal crop is lettuce, and to-day, if there is any difference, the lettuce in the frames that have no cover is better than that in the frame yard. My impression is that frost gets into a cold frame more under the sides than by the glass, if that fits closely, and I therefore pay more attention to backing the sides than to covering the top. Of course, in hotbeds the case is different, as there we cover the glass to prevent radiation of heat from within. To-day it has been dark and sleeting, and the shutters on our frames now covered with ice, and so they have been left on. The uncovered frames have had the advantage of daylight. This state of things occurs so often during the course of a long winter, that the shutting in from sunlight more than balances any advantage in the shutters. As hot-beds are rapidly becoming a thing of the past, I think that mats and shutters on cold frames will soon be dropped. If it were possible to exclude frost altogether by this means there would soon be use for them, but I have never yet seen frost altogether kept out from a cold frame in our severest weather. Even in our cauliflower frames, which are built with nine inch brick walls and soddened nearly to the top, the frost gets in with the shutters on almost as readily as without them. In fact, it seems to me that frost gets through the brick walls as quick or quicker than into a board frame well banked with earth. I am getting anxious to see your prize essays

as I hope to hear from some of those practical men whose experience may be better worth recording than that of your humble servant,

W. F. MASSEY.

Hampton Gardens, March 9th, 1882.

AGRICULTURE IN THE SOUTH.

Its Needs and Opportunities.

By TH. POLLARD,

Ex-Commissioner of Agriculture of Virginia.

While deeming it best to pursue a little further the general subject of Grasses in relation to the wants of agriculture in Virginia and the more northern of the Southern States, we do not intend to go into a special description of clover, and the grasses, but to treat the subject in a more general manner. After speaking of the advantages of Virginia for the production of grass, it will not be improper to say something of the nutritive value of the different grasses, fertilization, collection of seeds, and perhaps of the quantity, and time to sow, and time of cutting, and mode of curing.

The nutritive value of the food of an animal depends greatly on the proportion of the constituents it contains, and more particularly on the proportion of the nitrogen in its composition, though the phosphoric acid (phosphate lime) is very important; the nitrogenous substances are called albuminoids, and are albumen, gluten, gelatin, caseine, legumen, and fibrin. The non-nitrogenous substances are starch, gum, sugar, woody fibre, mucilage, etc. The former go to make flesh, muscle and blood—the latter, to produce fat and maintain heat and respiration. If oil cake alone is given, which is only slightly nitrogenous, the animal will fatten, but will not add muscle, or much size, and if the same animal is fed on roots, grasses, etc., his muscles are developed, size increases, but fat is not formed in the same proportion. Corn, though mostly non-nitrogenous, contains nitrogen enough to produce both muscle and fat, though animals will not do well on corn alone. Farmers and stock raisers have generally arrived at pretty correct conclusions regarding the nutritive value of different grasses and fodders; not always, however, and not under varying circumstances of soil, climate, time of cutting, and mode of curing. The German government has given its farmers much assistance in arriving at the nutritive value of different seeds, modes of mixing, value of different mixtures, etc., and it is said their farmers always carry in their pockets memorandum books prepared by the different "Experiment Stations," giving full and accurate statements and directions on this whole subject—comparative value of different grasses, and their seeds, time of cutting, modes of curing, and proper proportions of mixing, with relative value of mixtures. Our Governments, State or Federal, have attempted nothing of this sort for our farmers, and have sadly neglected their interests. Government aid and protection of farmers is one of our wants, particularly in the South and West. But we are digressing.

Elaborate analyses of all the grasses, natural and artificial, used for feeding, have been made by Prof. Way, Chemist to the Royal Agricultural Society of England, and by German and other chemists. We have not space here for them. We must content ourselves with the following nutritive equivalents of the articles named, prepared by Boussingault. English hay is taken as the standard, 100.

English Hay.....	100	Potatoes, k't in pits, 333	
Lucerne.....	83	Beans.....	23
Red clover hay.....	75	Peas.....	87
Red clover—green..	311	Indian corn.....	70
Rye straw.....	479	Buckwheat.....	55
Oat straw.....	383	Barley.....	65
Swedish turnips.....	676	Oats.....	60
Best, white Silesian	600	Rye.....	58
Carrots.....	382	Wheat.....	55
Potatoes.....	319	Oil cake, linseed..	32

Then 100 lbs. of English hay, (we suppose good average hay), if fed to an animal, will

produce the same amount of nourishment as 83 lbs. of lucerne, 75 lbs. of clover, 479 lbs. of rye straw, etc. These estimates are founded on analyses, and are no doubt borne out by practical observations. At the same time, the nutritive values vary on account of soil, climate, seasons, time of cutting, mode of curing, etc. We do not know why wheat straw is omitted in this estimate. Analysis and experience proves it to be more valuable than rye straw, and less so than oat straw.—Wheat straw has 2 per cent. of albuminoids, 30 per cent. carbo-hydrates; oat straw 25 albuminoids and 39.3 per cent. carbo-hydrates; while rye straw has 15 of the former and 27 of the latter, and has more crude fibre than either oat or wheat straw, the oat having least of the three.

We are aware that this is some digression from the original subject introduced, but it is important that the farmers, while being told they should raise more grass and stock feed, should at the same time be told what it is preferable to raise. Whether to raise clover, or orchard, or tall meadow oat grass, or timothy, or herds grass, or lucerne, or a mixture, will depend on a variety of circumstances.

In Virginia and the other States incidentally referred to, we believe clover is by far most valuable, the land to remain in it two years. If the land must stand longer than this, add orchard and tall meadow oat grass, and where winter grazing is sought after, the orchard grass is most desirable. Our wet lands should go in herds grass. Only rich low lands (not wet) will produce timothy successfully in Virginia. If lucerne is grown it must be put on *very clean land*, highly fertilized, and kept clear of the other grasses, particularly wire grass, by every device. For winter grazing, rye and oats seeded in August are very useful.

To have good and successful grass, fertilization of some kind must be used, unless the land is in a very good condition, or new, freshly cleared. It will not do to trust grass seed to poor land, as did our old "Federalist" of Virginia, mentioned in a former number, who, after a sickly growth of clover for two years, fallowed the land and seeded in wheat, (which we think we did not mention previously); the yield was very poor, and the conclusion was that *clover*, not the *land*, was not "federal." The best application for grasses is stable manure, where it can be obtained in sufficient quantity, applied in winter or early spring. But it can rarely be obtained in sufficient quantity, and then we must use commercial fertilizers, with a proper proportion of nitrogen, phosphoric acid, and potash. If the land is fresh, or has from any means obtained vegetable matter, then phosphoric acid (bone in some form, or S. Carolina phosphate) alone will answer. The phosphoric acid is most indispensable, as nature has no means of furnishing it to the land, and the constant tendency is to its exhaustion. Nitrogen, in the form of ammonia, is quite freely abstracted from the atmosphere by growing plants, particularly by clover—Still, increased growth is always produced by application of nitrogen, and nitrate of soda, (Chili saltpetre), 100 to 200 lbs. per acre, pays well on grass land. It should be applied last of winter or first of spring, not in the fall, as it is very soluble, and it is apt to be washed out by the rains. It is much used on grass in England.

Water, by *irrigation*, is one of the best of fertilizers for meadows. Almost every summer we encounter more or less drouth, sometimes very protracted as in the past season, greatly diminishing the hay crop. At this time there is great scarcity of hay in Virginia and other States, and the present should teach the farmer the necessity of more grass raising. Cattle in many instances have had to be sold to the butchers for want of provender to carry them through the winter.—Though irrigation is not adapted to much of the lands of Virginia without too much ex-

The American Farmer

"O FORTUNATUS NIMIUM SUA SI BONA MORIBUS
"AGRICOLAS." Virg.

PUBLISHED ON THE 1ST AND 15TH OF
EVERY MONTH.

By SAMUEL SANDS AND SON,

At No. 128 West Baltimore Street,
(Sign of the Golden Plow.)

BALTIMORE, MD.

Richmond, Va., Office, 610 W. Main St.

WILLIAM B. SANDS, Proprietor.

SAMUEL SANDS, } Editors and Publishers.

WM. B. SANDS, }

Dr. THOMAS POLLARD, Associate Editor.

SUBSCRIPTION:
\$1.50 a year, in advance. Clubs of five or more
will be supplied at \$1 each.

ADVERTISING RATES:

	1 Time	1 Mo.	2 Mo.	3 Mo.	6 Mo.	12 Mo.
1 inch	\$1.25	\$2.25	\$4.00	\$5.50	\$9.00	\$15.00
12 lines						

Liberal reductions will be made on larger advertisements. Advertisements to remain on outside page subject to special contract. Transient Advertisements payable in advance—all others quarterly. Advertisements should reach us by the 12th and 27th of the month, to secure insertion in the succeeding issue.

At the office of THE AMERICAN FARMER are located the offices of the following organizations, of each of which its proprietor, Wm. B. Sands, is secretary:

Maryland Horticultural Society.
Maryland Dairymen's Association.
Maryland State Grange, P. of H.
Agricultural Society of Baltimore Co.
Also, of the Maryland Poultry Club,
Geo. O. Brown, Secretary.

BALTIMORE, MARCH 15, 1882.

We call upon our friends not to relax their efforts to increase, before the season of active farm work begins, the circulation of THE AMERICAN FARMER. As the paper gathers new subscribers and readers its sphere of usefulness expands in direct proportion, and our call for the continued aid of those who know its value is not entirely selfish, since the benefits to accrue will be mutual.

The address of Dr. Pollard is 610 West Main street, Richmond, Va., and all communications will reach him more promptly if given that direction.

A NEW NEIGHBOR.—The Star, a new one cent afternoon paper, occupies quarters adjoining THE AMERICAN FARMER. It is wide-awake and bright, new and well printed, and is receiving deserved marks of popular approval. Long may it shine!

Sale of the Walters Percherons.

It has been decided to change the place of sale of these horses, and they will be offered at the farm of Mr. Walters, on the York road, near Govanstown, about four miles from Baltimore, and easily accessible by horse cars or private conveyance.

The catalogue issued of this sale is probably unique among such publications, containing in addition to a description and brief pedigree a photograph from life of each animal; many of the pictures being exceedingly natural and spirited, and giving an idea of the form and carriage of the horses which wood cuts fail to do.

The opportunity offered of securing good specimens of this race, not likely soon, if ever, to be repeated in this vicinity, makes this sale one of great importance, and we again call attention of clubs and others to the chance they have of securing the choicest specimens of the best draft horses known in the world, and gifted with a power to transmit their good qualities which is unsurpassed.

We regret to see it stated that the Delaware Beet-sugar Company, extensively engaged in making sugar from beets as an experiment, near Wilmington, has abandoned the project as unprofitable.

Our Prize Essays.

We are disappointed in not being able to announce all the awards in the competition for the prize essays, but the distance apart of the judges has delayed the decisions in one or more classes, and in the others the judges have not yet agreed.

In the third class, "On the routine of successful trucking for the Baltimore and Northern markets, with suggestions on the cultivating, handling and shipment of leading crops of small fruits, duplication of crops, and recommendations of varieties, manures used, etc.," the committee, consisting of Thomas B. Todd and T. Alvah Merritt, Esqs., of Baltimore county, and Albert Dodge, Esq., of Norfolk, Va., have awarded the prize to the essay signed "Arundel," which proved to be by Mr. R. S. Cole, of Anne Arundel county, Maryland, a well known contributor to our pages. This essay we expect to publish in our next issue.

In the fifth class, "On the system or crops best adapted to supersede in part the tobacco crop in lower Maryland, now as a rule so unprofitable," the committee, kindly acting as arbiters for us—Hon. Wm. B. Hill, of Prince George's; Dr. George W. Dorsey, of Calvert, and George Thomas, Esq., of St. Mary's—agreed in bestowing the prize on the essay marked "O," and on opening the sealed envelope to correspond, we found the writer to be Dr. Joseph R. Owens, of Anne Arundel county, Maryland. This essay we publish in full in this issue, and its merits we think will be recognized by all readers.

The gentlemen who are named as the recipients of the awards are requested to draw on us at sight for the prizes offered.

We hope to be able in our next to announce the results in the other classes. The prize essays will be published as promptly as circumstances will allow, and some of those not awarded prizes, but whose merits are warmly eulogized by the judges, will also be printed under the conditions of the contest.

The Agricultural College.

The attempt to secure from the present Legislature of Maryland a renewal of the appropriation to the Maryland Agricultural College has met with the indignant opposition it deserved. That institution has for years shown its entire incapacity to promote the agricultural interests of the State. It has year after year traded as capital on the payment (out of the abundant revenue supplied by the State), of a debt created by bad management and needlessly prolonged. Its promises of reform have been always disregarded; and its direction is still in the hands of persons, who by education, training and experience, are unqualified for the duty of training the youths who are to become our future farmers. Every pupil who has gone out from its walls has borne witness against it.

Here is a partial array of the indictments against it:

The "Gunpowder Farmers' Club" of Baltimore County, at its last meeting, adopted the following preamble and resolution, as published in our last issue:

"It having come to the knowledge of this Club, that efforts are being made by the officials of the Agricultural College to have restored to that institution the State appropriation heretofore withdrawn at the instance of this and other farmers' organizations,

Resolved, That Gunpowder Agricultural Club requests the delegation from this county in the Legislature, to oppose and vote against any such expenditure of the taxpayers' money to an institution, which has long proved its inefficiency to advance in any direction the agricultural interest of the State."

The Farmers' Club of Sandy Spring, Montgomery County, the oldest farmers' association in the State, and noted for a membership of intelligence, capital and agricultural activity, adopted unanimously the following preamble and resolutions:

WHEREAS, An energetic attempt is being made to secure from the Legislature a re-

newal of its annual grant of \$6,000 to the Agricultural College.

Resolved, That the "Sandy Spring Farmers' Club," of Montgomery County, urges the delegation from said county, in the Legislature, to oppose and vote against any such expenditure of the taxpayers' money in aid of an institution which has long since proved its inefficiency to advance in any direction the agricultural interests of the State.

Resolved, 2d, That it is the sense of this club, that the proper course for the State to pursue with reference to the Agricultural College, is to sell out its interest therein and withdraw the income arising from the fund produced by the sale of public lands.

Resolved, 3d, That the members sign and forward the above resolutions to the Senator and Delegates from Montgomery county.

The "Enterprise Club" of Montgomery County adopted the same resolutions, and they were presented as a memorial, signed by all its members and spread in full upon the Journal of the Senate.

The "Farmers' Club of Montgomery County," an association of advanced and public-spirited young farmers, adopted the same resolutions.

Olney Grange, No. 7, of Montgomery county, the largest Grange in Maryland, having a membership of 150, adopted the same resolutions.

The Deer Creek Club, of Harford county, a well known and enlightened association, adopted the following:

Resolved, That the Deer Creek Farmers' Club recommend that the Legislature withhold any appropriation from the State Agricultural College until the said College is reorganized in the interests of the agricultural community.

Patapsco Grange of Baltimore county has adopted the following:

Resolved, That not realizing any advantage from the operations of the Agricultural College to the farming interests of the State, Patapsco Grange, No. 125, opposes any further expenditure of public money for its support, and that we call upon our representatives in the Legislature to antagonize any such appropriations.

Garrison Forest Grange, one of the largest in Baltimore county, several of the members of which have had sons as pupils at the College, expresses its views as follows:

Resolved, That in the judgment of this Grange, the appropriations heretofore made by the Legislature to the Agricultural College, have been of no benefit to the agricultural community; and further

Resolved, That this Grange earnestly protests against any more appropriations by the Legislature to that institution.

Other farmers' associations throughout the State have taken similar action.

THE Brown Chemical Company make a feature of "special" fertilizers, made up for particular crops according to their analyses, and are doing a very large business in supplying orders therefor; the testimonials which they present of their efficacy being very numerous and emphatic. See their advertisement on another page, and send for one of their circulars.

WE call especial attention to the Champion Corn Planter, advertised by Messrs. J. C. Durborow & Co. The Western farmers are far in advance of ours in their management of the corn crop, but there are many sections where the improved implements which they employ can be advantageously adopted. We recommend all so situated to send for circulars of the Champion Planter.

THE Middletown Transcript says that the cry of "Westward ho!" is now seldom heard on the Peninsula; but, on the contrary, it is gaining five new settlers for every one it loses by emigration. We do not believe there is any section of this broad country in which the farmers, as a class, are more favored by nature and enjoy more of the blessings and comforts that go to make life happy than right here on the Delaware and Maryland Peninsula.

pense, still we frequently see lands on the borders of streams, where permanent meadows may be formed by damming the streams and turning the water over the land at little expense. Trustworthy English farmers report that they have obtained more than eighty tons of grass per acre in one season by means of irrigation. Irrigated grass lands in Italy support easily two head of fat cattle per year, and have long done so. In many localities in European countries irrigated meadows have borne grass without any signs of deterioration within the memory of the inhabitants, although the crop has been cut and removed every year. Where our lands are suited for irrigation the crop of grass can certainly be doubled, and the meadow be made permanent, without any deterioration in land or production. Occasionally this plan had been adopted in Virginia, and with decided success. Mr. Magruder, of Albemarle, informed the writer by letter that he kept up irrigation on a meadow with great success. The yield has been very largely increased—how much we do not remember, and the letter has been misplaced. The quality of the grass gradually improved, the coarse grasses giving way to those fine and nutritious, and the meadow made permanent.

Ashes have very good effect on grass; so does gypsum, on lands where it acts, which is particularly the case in the western portions of our State; in Eastern Virginia on much land it has no effect.

Saving clover and grass seed is good economy for the farmer, for they are costly when used on a large scale; and while saving for his own use he may well prepare some for market, for they pay well. Instead of this, most of our clover and grass seeds are brought from the North and West. We know a farmer in Middle Virginia who annually saves orchard grass seed with profit, and a considerable number of our farmers in the Valley are beginning to save clover seed. Mr. Howard, in his "Manual," says he saved (in Georgia) from an acre of "meadow oat grass" six bushels of seed, selling for \$18. The grass was cut with a cradle, bound, and threshed with flail; he saved the hay at the same time, as the seed of this grass ripens while the stalk is green. The seed of clover is saved with a simple machine—frequently home-made—drawn by a single horse, with teeth so arranged as to take off only the heads, or the clover may be cut with a cradle or blade high up from the ground.

In our last we omitted to say that Prof. Armsby's reference was to hogs eating wheat straw in comparison with their eating clover, and the grasses. And here we desire to say, that hogs will eat, very well, ensilaged corn fodder. We are feeding it to them now.

Encouraging Words.

DEAR SIR: Your meritorious departure has induced me to use some exertions to get up a club. I have succeeded in placing THE AMERICAN FARMER in the homes of some that have never before had a paper devoted to their calling, and if they will carefully read the twenty-four numbers they receive I feel satisfied they will readily admit it the best investment they ever made. Papers devoted to all other industries are usually well patronized by their respective classes, and as the farmer is more isolated than any other the greater the necessity for information relating to his calling. It will aid him in improving his farm as well as mind, to keep better stock, use better seed and fertilizers, and assist to elevate his calling, which has been frowned on for many years. His mind, farm, stock and crops will then, like THE FARMER, improve with age.

WM. E. MANAKEE.

Montgomery county, Md.
"The sample copies to hand, and THE AMERICAN FARMER is just the very thing I have been looking for. Long may it prosper."

L. LANKEFORD, M. D.

Southampton county, Va.

"THE AMERICAN FARMER came duly to hand, and very much pleased with it. In fact, I consider it the best agricultural paper that I have ever seen."

M. N. WILLETS.

New Castle county, Del.

Letter from an Old Subscriber—Peruvian Guano and Home-made Fertilizers.

DR. THOMAS POLLARD—

My Dear Sir: I have this day a gratifying response to my remark that I would subscribe to any paper with which you were connected, in two numbers of THE AMERICAN FARMER, to which I believe I was a subscriber over forty years ago—such interest, perhaps, merged in reasonably paramount regard for the publications in my own dear native State of Virginia. I was one of the few who, somewhat doubting of success, responded to the call of that eminent agriculturist, Edwin Ruffin, Esq., to meet in Richmond for formation of a State Agricultural Society, and I believe I served through the whole terms of himself and his distinguished successor, Philip St. George Cocke, Esq., and can thus claim to have been young longer than most of your readers, and thus entitled to the privileges and attributes of young men—as in a writ of right, the length of possession is one of the most important ingredients of title.

Though a *limb* of the law, and named in the Virginia State Code as one of its framers, my proclivities were always agricultural, and especially in the stock department, having imported or otherwise acquired amongst the best of every description, still retaining the different varieties on my "Carter's Grove Farm," on James river, Virginia.

It would be very gratifying if I could repay a tithe of the interest and benefit received from published communications in THE AMERICAN FARMER; either of two articles in the number I this day received, of February 15, *amply repaying an annual subscription*; referring to "Chemical Fertilizers," as discussed by the Deer Creek Farmers' Club, the other, with the promise of more, under the caption "Agriculture in the South, Its Needs and Opportunities," by yourself.

On the subject of subscription I suggest that the sum of \$1.50 is of rather inconvenient transmission, unless in a club for \$5.00. I enclose \$2.00 as more convenient, suggesting whether for *your* advantage such advance payment may not deserve the position of the club inducement, and in any event you can credit as far as it will go.

In a somewhat rambling excursion, induced by proclivity for farming, and anticipated future intercourse and intercommunication, I shall follow the current of my own mental thoughts rather than any prescribed rules, unless those referred to are on subjects of great interest.

I was one of the patrons of what were termed "bought fertilizers," especially Peruvian Guano, the speedy effects of which were somewhat marvelous; subsequent consideration and observation creating a doubt whether these effects were not too speedy and evanescent and exhaustive of the properties of the soil. There can be no doubt of the value of this fertilizer, especially in early production of vegetables, etc., convenient to cities. For substantial, permanent improvement, it is reasonable that some skillful combination may exceed the value of any one ingredient, at least where the "needs and opportunities" may be different, the contraries in the views of the most eminent farmers frequently arising from the contrariety of circumstances which should always be considered.

When I purchased or exchanged for the "Carter's Grove Farm," on James river, a few years ago, and owned by Gov. (King) Carter, leaving in his will a request that in all times to come it should be called and go by the name of "Carter's Grove," it was chiefly occupied by his Burwell descendants. I found at the confluence of James river and Burwell bay a remarkable marine deposit, consisting of bones, shells, etc., some of them said not to be peculiar to this continent. It is wisely determined that no one generation

should monopolize all the peculiar benefits nature can bestow.

This deposit or compound could not be utilized without machinery—mills, engines, etc., which few farmers would think of.

I determined, however, for my own use, to make the experiment, several years ago, and test it at my own expense, having now there an engine and several mills in full operation. My first operation was to grind up the natural compound, and subject it to the most scientific analysis the city of Philadelphia afforded. I then enjoined that the most perfect compound that chemical science allowed should be added, irrespective of cost, until a point was reached where the cost would prevent its paying.

The result was that with this natural substance a good fertilizer, with 90 per cent. of fertilizing properties, was made, and for some soils an admirable one—better than Peruvian Guano. It can be produced at from \$15 to \$27.50 per ton. The effects of this material excited the high commendation and admiration of the judicious occupants of Westover and Brandon, about the highest specimens of agricultural pre-eminence the earth affords. I have never offered a pound for sale, it not being in my line to encounter interested criticisms or the requisitions of the Virginia laws, that *each bag* should be branded with special contents. Mine was made in bulks of about 8 tons at a time, with specified additions of Peruvian Guano, bone dust, ammonia, soda, potash, etc., for the whole 8 lots, but I do not believe it possible that *each ton* can be made to contain its exact proportion. The steps have been taken at the North for extended manufacture, but I believe with assurance that more can be sold in Maryland and New Jersey than can be prepared.

You pertinently quote the motto: "No grass, no cattle; no cattle, no manure; no manure, no grass." Now, too much cannot be said of barnyard manure, but with every effort and advantage I have never been able thus to make a whole farm rich. The farmer who made a lot of ten acres a year rich enough for tobacco was never regarded negligent in my native region of Virginia. It is thus that "bought fertilizers" become a necessity for extended improvement.

There is one subject, viz.: ensilage, which I am ignorant of from experiments, and about which I desire to hear and see more. I have been much interested in the communications of such sensible, practicable persons as R. H. Dulaney, Bolling W. Hazell, Esqrs., etc. I confess this interest is enhanced, and a somewhat painful apprehension is relieved, that their bank accounts would not sensibly feel the risk even of a failure. I must also confess that very unfavorable preconceptions have been weakened by reported results, and sincerely hope they may continue successful.

EDWIN G. BOOTH.

1526 Walnut street, Philadelphia,
February 24, 1892.

SETTING UNSEASONED POSTS.—I was taught that fence posts should be seasoned, but a trial of bar posts set green, seemed to disprove it. Feeling encouraged in that direction, my brother, about June 1, 1845, sawed from thrifty white oak trees, posts for a fence in front of our house. They were 6 by 6 inches at butt, 3 by 6 inches at top, and were set at once, the fence being completed in July. The fence is now standing and is in fair order, only two of the posts having been renewed in the thirty-six years. We have proved on this farm that chestnut posts are more durable if cut and peeled and placed directly in the ground.—*Country Gentleman.*

In view of the fine prices the white Burley tobacco has brought in the Petersburg market last fall—the first time it has been raised in that section—it is probable the farmers will plant largely of the variety this year.

Home Department.

A Home.

Dr. Holmes says: I never saw a garment too fine for a man or maid; there never was a chair too fine for a cobbler or a cooper or a king to sit in; never a house too fine to shelter the human head. These elements about us, the glorious sun, the imperial sun, are not too good for the human race. Elegance fits man. But do we not value these tools a little more than they are worth, and sometimes mortgage a house for the mahogany we bring into it? I had rather eat my dinner off the head of a barrel, or dress after the fashion of John the Baptist in the wilderness, or sit on a block all my life, than consume all myself before I got to a home, and take so much pains with the outside that the inside was hollow as an empty nut. Beauty is a great thing, but beauty of house garments and furniture are tawdry ornaments compared with domestic love. All the elegance in the world will not make a home, and I would give more for a spoonful of real hearty love than for whole shiploads of furniture, and all the gorgeousness all the upholsterers in the world can gather.

THOSE USEFUL BAGS which are a part of almost every woman's shopping equipment appear among other novelties made of substantial and homely bed-ticking. For these the narrow blue and white striped ticking, cut about eight inches long and ten inches wide, is chosen. The blue stripes are covered with gilt braid, and the white stripes ornamented with point-russe, stitch in colored silks—green, red, blue and orange—spanning the white at small intervals, the broad edge of the ornament resting on the gilt braid. The result is as pretty and as rich a combination of colors as one could wish. The bag is then made up with colored satin—red, brown, blue, or green, and is gathered with a puckering string at the top. The bed-ticking part is also partly lined with satin, and the lined corner is turned over.—*Art Amateur.*

A SERVICEABLE COVER to throw over a lounge or couch in the sitting-room, is made by taking a broad, bright stripe of cretonne; on each side of this put a strip of black or dark brown cloth (line it to give body to it); on each edge put a row of fancy stitches in silk or crewel; the ends may be finished with fringe or not as you choose. Another cover is made of the drab Aida canvas, with the ends worked in loose overcast stitches. The canvas may be fringed out if you take the precaution to overcast the edge where you stop travelling, to prevent its fraying out to greater depth than you care to have it.—*New York Post.*

HOW TO DISPOSE OF CHRISTMAS, EASTER AND BIRTHDAY CARDS is among the puzzling questions of the season. Various wire racks have been brought out for this purpose, but the effect, as a wall decoration, has not been agreeable. This can be remedied by lining the wire rack with crimson satin slightly puffed, and arranging the cards so that the satin will make a sort of frame. Above is a crimson-covered border, on which is embroidered the word "Souvenir." Below is a corresponding piece embroidered with flowers and hung with tassels.

BATTER PUDDING.—Take one pint of milk and three tablespoonfuls of flour and beat them until smooth. Add a small quantity of salt and three eggs, yolks and whites beaten separately. Bake in buttered cups or a pudding-dish about half an hour in a quick oven. Serve warm with sauce.

WARM under-flannels and good home-made woolen stockings are a comfort to children in the winter season.

Hygiene.

HEALTH HINTS FOR WOMEN.—In a lecture given by Dr. Lora Jackson, in Philadelphia, upon the question what can women, living at home, doing their own housekeeping or employed in stores, factories, sewing, etc., do toward keeping their own bodies in health? the necessity was strongly urged, especially to those engaged in sewing, of daily exercise. A daily walk was almost a necessity, but, in addition to this, there should be some way of bringing into play, if only for a few minutes, all the muscles of the body. The lecturer spoke of a little arrangement for gymnastics, which is very cheap, and can be fixed in any room. The systematic use of this for a few minutes every evening before going to bed, with the clothing free, and the windows lowered a little for fresh air, will be of great advantage; she engaged to bring such an arrangement at her next lecture, and show her audience how to use it: The daily bath was insisted on, not only for cleanliness, but as a means of avoiding colds. This was not to be the plunge bath, which is too great a shock for any but very vigorous persons, but a quick wash from head to foot with a sponge or towel, followed by a vigorous rubbing, the whole not lasting more than five minutes. Regular meals, with nourishing food, were urged. The doctor condemned the practice so common among sewing women and others of sedentary occupations of living on baker's bread and tea, because "it doesn't seem worth while to cook just for ourselves." But it is worth while to keep up the strength for work, and to that end the woman who sews needs not only meat and vegetables, but sufficient variety to keep up her appetite; milk was especially recommended, as both handy and extremely nourishing. Another point, too frequently disregarded, was the necessity for rest and sleep. When you find, after being close at work for days or weeks, that you are getting a queer pain at the back of the head; when you get a habit of carrying the thought of your work, whatever it is, to bed with you, and can't stop thinking about it, and when you finally get to sleep, go on working in your dreams, then it is time to break right off and rest; better lose a few days now, even at considerable sacrifice, than go on a little longer and be laid up for months with a spell of illness, or ruined for years by falling into that dreadful state known as nervous prostration.

Domestic Recipes.

STAINING FLOORS.—I know of nothing better than the permanganate of potash; it is inexpensive—about two ounces may be bought for a few cents at the stores, and this quantity mixed in water would be enough for a moderately large room. It is most easily applied, using a large flat brush like those used by whitewashers for the general surface, and a house painter's small brush for the corners. It has the further advantage of being a disinfectant, so that in thus staining your floors you are adding to their healthiness. I can hardly give an exact proportion for mixing, as so much depends on how dark you wish the floor to be. When first applied you will find the color a lovely bright crimson, but it turns brown immediately; if one application does not make it as dark as you wish, a second coating may be administered after the first is dry. Let it remain a day or two after it has attained the color you desire, and then let it be well rubbed over with turpentine in which beeswax has been dissolved. This will require to be done every week, when it will soon assume a nice polish. On no account use varnish of any kind.—*Ez.*

EGG BREAD.—Take one pint of corn-meal, add three beaten eggs, a cupful of boiled rice, a teaspoonful of butter, same of salt, and sufficient sweet milk to make a batter. Bake in a shallow, square pan in a quick oven.

The Grange.

The Grange and Farmers' Convention—Co-Workers for Good.

News. Editors American Farmer:

In the last number of the FARMER there is published a lecture before the Montgomery County Grange, in which an allusion is made to, and compared with, the late Farmers' Convention held at Sandy Spring. The lecturer attended and participated in both, and drew the conclusion that while the convention was interesting and useful, it was equivalent to a Grange without many good things belonging to the latter, and asks why the one hundred and fifty who attended the convention did not join the Grange?

Now the convention is intended, not to antagonize but to add to the work of the Grange, by carrying an interest in agriculture, in mutual kindness and co-operation where the Grange, from its very organization, does not go; that is to the people at large, of all trades, professions and classes. Its call for the meeting is addressed to every one interested in farming and farmers, many of whom, by the rules of the Grange, could not be admitted to membership. Venerable men who would scarcely be able to attend night meetings, and whose experiences were listened to almost reverently by those now in the prime of vigorous manhood. Professional men, mechanics and laborers, merchants and teachers attended, and felt as the lecturer remarked, "that the proceedings were interesting, the views and opinions expressed in a way to afford continued gratification."

Some of those present were from isolated sections where no Granges have been organized, and others who feel an objection to joining what they call a "secret society."

Such meetings did not only the Grange but all other agricultural and horticultural associations. It would be a bright day for Maryland agriculture if similar conventions could be established in every county in the State. Meeting but once a year they serve as an annual tie between sections and neighborhoods, promote good fellowship, and extend personal acquaintance, thus aiding to break down the barriers that too often shut in the farmer and cramp and dwarf his intellectual faculties and better nature.

Though myself not a member of the Grange, members of my family are, and I sympathize with its efforts in the same direction and its educational effects in many ways. In the convention at Sandy Spring the facility in debate showed the training of the Grange, as many of the most active and interested attendants were grangers.

Let the two organizations then continue their good work, aiding one another by diffusing information and promoting that co-operation so essential to prosperity. The more flourishing the Grange, the greater will be the interest in the convention, and the success of the meetings of the latter will stimulate interest in the Grange.

Those not members of the Grange, and those who cannot become so by its rules, will find, from an enlightened discussion of subjects before the convention, that the interest of one portion of a farming community is the interest of all; members of the Grange cannot prosper without benefitting the whole. Thus prejudices will be removed, and each will wish the other "good speed" in his daily avocations.

HENRY C. HALLOWELL,

President late Farmers' Convention.

March 6, 1883.

Maryland Granges.

BALTIMORE COUNTY GRANGE, No. 13, will hold its regular quarterly meeting on Tuesday, March 28th, at the hall of Garrison Forest Grange, at Pikesville, at 11 A. M.

SPRINGFIELD GRANGE, No. 158, Carroll county, has elected the following officers for

the ensuing year: M. J. D. Shearer; O. E. W. Hains; Lec., Francis Warner; St. J. W. Hoffman; As. St., Wm. H. Shearer; Ch., Jacob F. Shearer; Tr., A. Cramer; Sec., Wm. K. Zeigler; G. K. John F. Sheffer; C., Mrs. J. D. Shearer; P., Mrs. J. W. Hoffman; Fl., Mrs. John F. Sheffer; L. A. S., Mrs. Lydia Miller.

In Memoriam.

HALL OF SPRINGVILLE GRANGE, No. 158, Carroll County, Maryland.

WHEREAS, It has pleased the Heavenly Father in His infinite wisdom to remove by death our beloved brother, Wm. J. Hoffman, who departed this life February 10, 1882; therefore,

Resolved, That in the death of Bro. Hoffman we bow in humble submission to Him who knoweth and doeth all things well; also, that this is but another warning of the way of the living.

Resolved, That this Grange has lost one of its most earnest, devoted and influential brothers; the Christian church a true and faithful member; the community a good citizen, and the bereaved family a kind and loving husband and father; all realizing that our loss is his eternal gain.

Resolved, That a copy of these resolutions be spread upon the record of the Grange; a copy sent to the family; also, to THE AMERICAN FARMER, Farmers' Friend, Maryland Journal, Westminster Advocate and Manchester Enterprise for publication.

EPH. SHEARER,
JOHN S. WERTZ,
JACOB F. SHEARER,
Committee.

A Department of Agriculture.

The Committee on Agriculture of the House of Representatives has repealed a bill for making the Department of Agriculture, an executive department, under the supervision of a Secretary of Agriculture appointed by the President. It likewise creates an Assistant Secretary of Agriculture, who shall be a practical agriculturist, and several Chiefs of Bureaus, whose terms of service are to be four years each, the following being the Bureaus designated: First, the Bureau of Agricultural Products, which shall include the division of botany, entomology and chemistry, the chief of which bureau shall be a practical agriculturist, who shall investigate the modes of farming in the several States and Territories, and shall report such practical information as shall tend to increase the profits of the farmer; second, the Bureau of Animal Industry to be in charge of a competent veterinary surgeon; third, the Bureau of Land, the chief of which shall investigate and report upon the resources or capabilities of the public or other lands for farming, stock raising, timber manufacturing, mining or other industrial uses; fourth, the Bureau of Statistics, the chief of which shall collect and report the agricultural statistics of the United States, and in addition, all important information relating to labor and wages in this and other countries, the mode and cost of transporting agricultural products to market, the demand, supply and prices in foreign markets, etc.

Salt as a Fertilizer.

The Massachusetts Agricultural Society is said to have arrived at the following conclusions in regard to the manurial value of salt: "That salt has the property of hastening the maturing of all grain crops; that wheat on salted land will ripen six to ten days earlier than on unsalted land, all other conditions being equal; that it increases the yield from twenty-five to fifty per cent; that it stiffens the straw, and prevents rust and smut; that it checks, if it does not entirely prevent, the ravages of the chinch bug, and

that there is no danger of a man's pocket permitting him to put too much salt upon his land, as two barrels per acre will injure no grain crop. The best time to sow salt is in the spring, and it ought to be the first thing done on either fall or spring ploughing, as all after-stirring of the land assists in its equal distribution through the soil. The best and easiest method of sowing salt, in the absence of a machine for that purpose, is to sow it from out of the rear end of a wagon, the sower using both hands while the team is moving at a slow walk. In this way thirty to forty acres can be sowed in one day. The quantity used may be from 150 to 300 pounds per acre, but the larger quantity is the better."

VOL. IX of the American Jersey Club's Herd Register has been published, and may be had of the Secretary, Mr. T. J. Hand, No. 3 John street, New York.

Baltimore Markets—March 16.

Wheat.—For Southern there was quite a good request to-day and holders were firm; good prime Patz sold at 136@138c., and do long-berry at 143@145c. per bu.

Corn.—Southern was in active demand, and the feeling was strong and buoyant; white selling at 64@65½c. for off grade lots, 66 for lots afloat, and yellow at 76 for small lots, partly from store. At the close we quote Southern white at 85@86c., and yellow at 75@76; Western mixed 73½ cts.

Oats.—The market was quiet to-day but steady. We quote to day as follows: Western mixed at 51½@52c.; do bright at 52@53; do white at 54@55; Pennsylvania at 53@55, and Southern at 51½@55.

Tobacco.—The offering of Maryland in the past week was rather more liberal and brought out a good demand for Holland and Germany. The market is firm and prices are well maintained. The quality was mostly common, and holders are apparently more encouraged over the situation. We quote viz.: Maryland inferior frosted 35@36; do sound common 44@45; good common 55@56; do middling 58.50; do good fine red 58.50@60; do fancy 110@115; upper country 14@16; ground leaves 33@38; Ohio inferior to good common 35@44; greenish and brown 34@36; do medium to fine red 36@38; common to medium spangled 36@37; do fine spangled and yellow 37@38; do air-cured medium to fine 85@112.

Live Stock.—Beef Cattle.—We quote: Very best 6½@4-5 cts.; first quality 5½@6½ cts.; medium quality 4½@5½ cts.; ordinary thin steers, oxen and cows 2½@3½ cts.; extreme range of prices 2½@4-5; most of the sales were from 5½@6½. Milch Cows.—Good cows are wanted, and for common there is little or no sale. Prices \$30@60 per head, retail. Hogs.—There has been a fair to full run of Hogs during the past week, and their quality is a trifle off as compared with those of the preceding week. Prices are fully ½c. lower than last week, very few selling at our top prices, and these extra heavy. Prices ranged at 8½@9½ c., with a few extra at 9½, with most sales from 9@9½. Sheep and Lambs.—There has been a light supply of Sheep in the market this week and it has been sold out rather early, the demand being fair on the part of our home butchers, with some outside demand. The quality averages better than it did last week. We quote Sheep at 4@7c. and Lambs 4½@7½c.

Breadstuffs.—Flour.—Not active, but the stock is held firmly. We quote: Howard Street Super 33.50@4.50; do Extra 34.75@5.50; do Family 35@37; Western Super 33.50@35; do Extra 34.75@5.50; do Family 35@37; City Mills Super 33.50@4.50; do Extra 34.75@5.50; (Rio brands) Extra 37@41; Fancy brands 47.75@55; Fine 33@35; Rye Flour 35@5.25; Baltimore Pearl Hominy 34.75@41; Grits 35@40; Corn Flour 35@40; Corn Meal 100 lbs. 31.70@1.75; Buckwheat Meal 100 lbs. 3.25@3.50. Rye.—Quiet, with quotations for fair to choice samples at 90@100 cts., the latter for car lots. Mill Feed.—The market is firm at 24 per ton. City Mills is steady at 30@37.

Hay and Straw.—Hay is active and the market shows an upward tendency. Straw is fairly steady. We quote as follows: Cecil county Timothy 18@20; Maryland and Pennsylvania Timothy 18@19; New York and Western 14@15 for large and 15@17 for small bales; mixed 18@15, and Clover 13@14 per ton. Straw is quoted at 9@11 for wheat; 10@11 for oat, 11@15 for long rye and 14 for short do.

Clover Seed.—Quiet with the current demand mostly of a jobbing nature. Fair to prime Pennsylvania is quoted 7½@8c. per pound, good to choice Western ranges from 8½@9½, with jobbing lots ½c. cent higher.

Provisions.—Quiet and prices maintained at the late advance. We quote packed lots as follows: Bulk Shoulders, packed 7½@8; do L. C. Sides 10½@11; do C. B. Sides 10½@11; Bacon Shoulders 8½@9; do C. B. Sides 10½@11; do Hams, sugar-cured, new 12½@13½; do Shoulders 9½@10; do Breasts 11½@12; Lard, refined tierces 11½@12; Mess Pork 7 bbl., new 18.25@19; do old 17.75@18.

Butter.—The demand is active, and the market for prime stock is firm. Medium and low grades are slow. We quote as follows: New York State, choice 38@40; Creamery, fancy 44@46; do prime to choice 42@44; Glades, selections 28@30; do dairies 24@26; N. W. dairy-packed, choice 35@38; Western good choice 28@35; do roll choice 31@33; Near-by receipts 36@38.

Cheese.—Is steady with a fair trade. We quote: New York State, choice 13½@14; do good to prime 12½@13; Western, choice 12@13½; do good to prime 12@12½.

Eggs.—Active and firm, at 16@17 cts. per dozen. Poultry.—The few dressed lots arriving find a good demand, but the prices are normal. Live chickens are in fair demand at 10@11 cts. per lb.

"Marked Benefit."

SAVANNAH, GA., Feb. 21, 1881.

H. H. WARNER & Co.: Sirs—I have taken your Safe Kidney and Liver Cure for kidney and liver diseases with marked benefit.

J. B. JOYCE.

Too Thankful for Words.

COAL RUN CROSSING, Ark., May 23, 1880.

H. H. WARNER & Co.: Sirs—I am too thankful to express in words the good your Safe Kidney and Liver Cure has done my family. REV. P. A. MARKLE.

For Sale.

6 BUCK LAMBS out of fine grade ewes by a thoroughbred Oxford Buck, price \$10 each. Can be seen at my farm (two miles east of Texas), on Pott Spring road, Eighth District, Baltimore County.

D. R. HOWARD,

2 SPEAR'S WHARF, BALTIMORE.

Levy Late, or Winter Peach.

I DESIRE again to call the attention of fruit growers to this very desirable fruit. It is the best-paying Peach grown. In its prime from November to December, long after all others are gone. Large, beautiful and luscious. A basket of them was sent to Gen. Grant last November. He wrote in answer: "They are the most beautiful I ever saw in my life." Try at least 12, which I will send by mail for \$2.50.

Dr. G. F. NEEDHAM, Washington, D. C.



10 Large Papers of Seeds, Flower or Vegetable.

COMPLETE assortment sufficient for small garden. Guaranteed fresh and reliable, in a neat box. Sent post-paid for 30 cents.

PHILADELPHIA SEED COMPANY,

14 N. Seventh St., Philadelphia, Pa.

THE DUCHESS

IS one of the very best of the new white Grapes. Hardy, productive, flavor the best. If you plant a vine this spring let it be a DUCHESS. \$1.00 each; \$10.00 per dozen; by mail. Address Dr. G. F. NEEDHAM, Washington, D. C.

Revolution in Sheet Music.

FIVE CENTS A COPY.

ALL the latest and most popular Sheet Music of the day, now retailing at 30 to 75 cents per copy, for sale at all news dealers and stationers. Having just opened our branch house here, we are prepared to supply dealers and agents at liberal terms. Send for our circular.

W. A. EVANS & BRO.

102 S. Twelfth St., Cor. Chestnut, Philad'a.

NEW SEEDS AND PLANTS.

OUR new catalogues of both Seeds and Plants for 1883 sent free on application. We offer a select stock of the best Seeds for the farm and garden, and a stock of Flower Seeds unsurpassed in all the finest varieties and choice novelties, and the most extensive collection of new and rare Plants.

HOVEY & CO.,

16 S. MARKET ST., BOSTON, MASS.

DR. R. P. LORD,

VETERINARY SURGEON

MEMBER of the Royal College of Veterinary Surgeons, London. Treats all Diseases of Horses, Dogs and Cattle. Spacious Infirmary Stables and Operating Shed.

Cor. Penna. Ave. and Hoffman St., Baltimore.



BEST PEAR

MARKET 6,920 bushels of them and other fresh Fruits and Berries grown and marketed in season of 1881. New Catalogue contains list of best sorts, at the lowest rates, sent FREE. J. S. COLLINS, Middletown, N. J.

BEAN'S EXTRACT OF ANNATTO. Price, 25, 50 and \$1.00 per Bottle.

The only true Butter Color ever offered to the public. Gives a genuine Junco, which pleases the eye and tickles the palate. Ask your nearest druggist or storekeeper to procure it for you. Address the manufacturers, BEAN & RABE, Wholesale Druggists, 47 and 49 North Second St., Philadelphia.



Hannibal Membrino

WAS foaled in 1878 on the stock farm of Mr. E. Peniston, near Lexington, Ky., and is by the celebrated horse Woodford Membrino, with a record of 2:31 1/4, who was the best son of Membrino Chief, sire of Lady Thorne, with a record of 2:18 1/4. Woodford Membrino has 8 colts with records of 2:30 and better, and also sired Malice and Manetta (owned by Mr. Robert Bonner), each with a trial of 2:19 1/4, and Manetta, driven by John Murphy on Mr. Bonner's three-quarter-mile track, Tarrytown, N. Y., Nov. 13, 1880, two miles in 4:35 1/4. Dexter's best time is two miles in 4:56 1/4; Gen. Butler the same. Manetta's trial 90 1/4 seconds better than the best two-mile time. Convey, also owned by Mr. Bonner, with a record of 2:23 1/4, has trotted a trial in 2:14 and it is thought is a good two-mile horse. Hannibal Membrino is out of Lady McKenry, who Mr. Peniston says, was the best brood mare on his farm, and could trot a mile in 2:31. She was also the dam of Nil Desperandum, who has a record of 2:24 1/4. Hannibal is half-brother to Princeps (who stands at \$300 the season), sire of Trinket, whose record is 2:19 1/4 as a four-year-old, present record 2:14. Hannibal is also a half-brother to Membrino Russell, who was sold last spring by Mr. Dana, of the New York Sun, for \$6,000, and was but 3 years old. He is also a half-brother to Membrino Dudley, with a record of 2:21 as a 7-year-old, sold lately for \$18,000, and stands at \$100 the season. Hannibal Membrino is a golden chestnut, fine, large horse, full 16 hands, of great power, speed, fine disposition, and trotted a trial when 4 years old in 2:30. Mr. Peniston thought so well of Hannibal that he did not sell him at his sale in 1876 but reserved him out of 900 head, and kept him until he was forced to sell. He refused \$4,500 for him when he was 4 years old. Parties fond of a good horse will have a chance to raise a high-priced colt at small figures.

— TERMS. —

Will make the season in Talbot County at \$30 to insure. Owners parting with mares will be held responsible for insurance money. Mares from a distance, or out of the county, will be charged \$30 the season, with the privilege of return next year free in case of failure, provided the horse is alive and in my possession.

JNO. K. CAULK,
TRAPPE, TALBOT CO., MD.

COTSWOLDS FOR SALE.

13 SELECTED EWES, 2 years old, in lamb, and 1 buck; also 4 last season's lambs, all pure stock. Also, 1 yoke of oxen.

GEORGE L. SCOTT, Darlington, Md.

FIELD AND GARDEN SEEDS

Our stock of seeds is from the most reliable growers, fresh and true to name.

Fertilizers of Standard Brands.

Griffith & Turner's Animal Bone Phosphate.
Griffith & Turner's Ammoniated Bone Phosphate.
Griffith & Turner's Alkaline Plant Food.
Griffith & Turner's Raw Bone.
Baker's Dissolved Bone.
Slinguff's Dissolved Bone.
Turner's Excelsior and Phosphate.
Holloway's Excelsior and Phosphate.
Lister's and Whitlock's Phosphates.
Peruvian and Orchilla Guano.
Plaster, &c.

Oliver Chilled Plows

run lighter, are more easily adjusted, and do better work than any other plow.

Malta Shovel Plows. Iron Age Cultivators.
Corn Drags. Cahoon Seed Sowers.
Planet Seed Drill and Cultivator.
Hagerstown Grain Drills. Monarch Grain Drills.
Farmer's Friend Grain Drill.
The Star Horse Rake. The Victor Horse Rake.
The Hagerstown Horse Rake. The Victor Horse Rake.
Hullard's Hay Tedder. Post's Hay Loader.
American Hay Elevator.
Double Harpoon Hay Fork.
Philadelphia Lawn Mowers.
McCormick Iron Mowers.
McCormick Imperial Reapers.
McCormick Trine Binders.
Farmer's Friend Corn Planters.
Keystone Corn Drills.
Hay, Straw and Fodder Cutters.

Grain Fans.

Cider Mills.

Corn Shellers.

Hay Presses.

Butter Workers.

MOSELEY'S



CABINET CREAMERY

Stoddard Churns. Davis Swing Churns.
Fountain Pumps. Cucumber Pumps.
Patent Galvanized Steel Fence Wire, cheap, durable and easily put up.

REPAIRING DONE WITH DISPATCH.
SEND FOR CIRCULARS.

GRIFFITH & TURNER

DEALERS IN

Agricultural Implements, Fertilizers and Seeds,

41 & 43 NORTH PACA STREET,
BALTIMORE, MD.

AUCTION SALE OF PERCHERON HORSES.



VICTOR,

IMPORTED IN 1881 BY W. T. WALTERS.

WE will offer for sale, on WEDNESDAY, 22d March next,

Twenty-five Imported Percheron Stallions and Mares, ranging in weight up to about 2,000 pounds, and in height up to 17 hands, it being our intention to close up our importing business.

After an experience of five years in France, and a further experience of some fifteen years as importers of these remarkable animals, we do not hesitate to claim for this lot that they are the most remarkable and valuable we have ever seen here or abroad. These horses have been imported the better part of a year, are thoroughly acclimated, and in fine health and condition for standing. We guarantee that our importations have been entirely pure-blood Percherons—that is, descended from the pure Arab, enlarged to give them all the power, more action and spirit, and greater endurance and docility than any draft horse in the world. This superior race is not to be confounded with Boulonnais, ordinary rough Norman and other French horses largely imported the past few years. On application, Catalogues containing details will be furnished by or previous to March 1st.

Sale to take place at 12 o'clock, at ST. MARY'S, our farm on the York Road, three miles from the city, near Govanstown, where the horses may be seen at any time. Horse cars leave the corner of Baltimore and Holliday streets at every hour and every half hour during the day. Passengers leaving the cars at the four-mile frame will find our farm a few hundred yards distant on Woodbourne avenue. The distance is a convenient and agreeable one to make by private conveyance.

W. T. WALTERS & CO.,
68 Exchange Place,
BALTIMORE, MD.

JOHN SAUL'S CATALOGUE OF

New, Rare and Beautiful Plants,
For 1882,

Will be ready in February, with a Colored Plate. It is full in all the really good New Plants—New Brassicas, New Crotoms, New Peas, &c., &c., with a rich collection of Fine Foliage and other Greenhouse and Hothouse Plants, well grown and at low prices, free to all our customers; to others 10 cents, or a plain copy free.

An immense stock of all the New French and English Varieties. Catalogues of Flower and Vegetable Seeds, Fruit Trees, &c., free. Everything pertaining to the Plant, Seed or Nursery business.

JOHN SAUL, Washington, D. C.

PRATT'S ASTRAL OIL WILL NOT EXPLODE.

Wholesale and Retail.

LAMPS OF EVERY DESCRIPTION.

For Sale by **W. & H. SPILCKER,**

Agents for Ches. Pratt & Co., New York. 163 Baltimore St.

For Sale.

TWO JERSEY BULLS.

ONE dropped October 19, 1880; price \$50; and one June 20, 1880; price \$30. Both solid color and entitled to be registered. Address

WM. S. CARROLL,

Phoenix P. O., Baltimore Co., Md.

\$66 a week in your own town. Terms and \$5 outfit free. Address
H. HALLETT & CO., Portland, Maine.

THE HAMBLETONIAN STALLION

PERALTO

Foaled 1877; Height, 16 1/2 Hands;
Weight, 1,200 Pounds.

SURED by "Pierson," son of Rysdyk's "Hambletonian," out of "Fashion" by "Hintoga Chief," a son of Hanley's "Hintoga." The dam of "Pierson" was "Fannie Clay" by Neave's "Cassius M. Clay."

PERALTO is believed to equal any five-year-old ever owned in Maryland for speed, breeding, size, appearance and form. As his sire showed a 2:30 gait at Prospect Park track, Brooklyn, N. Y., and his dam beat 2:31, it is thought he will prove a success as a stallion particularly as he comes of demonstrated prepotent families.

TERMS.

Twenty-five dollars the season, with privilege of return the following year in case of failure. Fifty cents to the groom for each mare. Mares from a distance kept on grain or pasture, as desired, at moderate rates, and owner's risk.

ROB'T HOUGH,

P. O. Tunis Mills,

TALBOT CO., MD.

MOSELEY'S CABINET CREAMERY.

Agents Wanted.



"The Standard Cream-Raising Apparatus of the Period."

Creamery and Refrigerator Combined.

HAS taken more First Premiums and Medals than any similar apparatus in America. Requires less ice to operate it than any other Portable Creamery on the market. Is protected by letters patent. Infringers no patent on device or process. For circulars address the manufacturers.

MOSELEY & STODDARD MFG CO.,

Poulinsey, Vermont.

GRIFFITH & TURNER, Gen'l Ag'ts,

41 and 43 N. Paca Street,

BALTIMORE, MD.

FOR SALE,

AT "MAPLE GROVE STOCK FARM,"

SHORTHORN CATTLE,

COTSWOLD SHEEP,

AND BERKSHIRE PIGS.

THOS. J. LEA,

Brighton P. O., Md.

For Sale.

Registered Shorthorns,

of both sexes and all ages, from calves to aged cows, at reasonable prices.

JAMES LEE,

Churchville, Harford Co., Md.

A. G. MOTT,

AGRICULTURAL IMPLEMENT

And Seed Warehouse,

40 Ensor St., Near Belair Market, Baltimore

SOLE AGENT for the great **BELLE CITY FEED CUTTER**, "Boss of the World" for Fodder, Hay and Straw. Cuts 4 lengths; from 1/4 to 2 inches. Will cut one ton in 30 minutes. SEND FOR CIRCULAR.

Virginia Lands.

Upper James Real Estate Agency,

By **WILLIAM HOLMAN,**

CARTERSVILLE, Va.,

WHO offers for sale upwards of 12,000 acres of land lying in one of the most desirable regions of Eastern Virginia. Catalogues sent on application.

ENGINES

(Fraction of Portable) for Farm, New Mill & Plantation. For prices, etc., write **THE AULTMAN & TAYLOR CO.** Mansfield, O.

Peruvian Guano.



I have secured the only cargo of

HIGH GRADE PERUVIAN GUANO

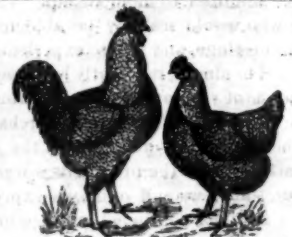
In the United States direct from PABELON DE PICA, the richest deposit of Peru, containing 12 per cent. of Ammonia, also a full supply from LOBO's deposits, containing 5 1/4 to 6 per cent. of Ammonia, which I offer for sale direct from ship or warehouse.

J. Q. A. HOLLOWAY,

107 McElderry's Wharf,

BALTIMORE, MD.

PLYMOUTH



ROCKS.

THOS. W. HOOPER,

128 West Baltimore Street, Baltimore.

Lake Roland, Baltimore Co.

EGGS, \$2 per 13; \$3 per 25. Send for circular.

WM. L. BRADBURY & CO.

Importers, Breeders and Sales Agents,

THOROUGHbred STOCK,

Nason, Orange Co., Va.

02-Illustrated Catalogue free.

Imperial Wine Vinegar.

NONPAREIL OIDER VINEGAR.

STRICTLY pure and reliable. Many imitations, costing 3 cents a gallon, are sold as Cider Vinegar. To guard against deception, observe that packages bear our brands.

Fresh APOLINARIUS WATER.

FREDK. M. BOLLMAN, Importer

63 S GAY STREET.

MAKE HENS LAY.

An English Veterinary surgeon and Chemist, now traveling in this country, says that most of the Hens and Cattle Powders sold here are worthless trash. He says that Sheridan's Condition Powders are absolutely pure and immensely valuable. Nothing on earth will make hens lay like Sheridan's Condition Powders. Dose, one teaspoonful to one pint food. Sold every where, or sent by mail for eight letter stamps. L. S. JOHNSON & CO., Boston, Mass., formerly Bangor Me.

CORRECT TIME!

If you want the Best Time Keeper for the Money that can be bought anywhere in the World, get the

LANCASTER WATCH

Sold by Jewelers throughout the United States. Its 16 grades are not the lowest in price but the best for the money. All Quick-Train 1/4-plate Movements. Established 1874. Ask for the LANCASTER, PA., QUICK-TRAIN RAILROAD WATCHES.

HIRAM SIBLEY & CO.

Will mail FREE their Catalogue for 1882, containing a full descriptive Price-List of Flower, Field and Garden

SEEDS

Bulbs, Ornamental Grasses, and Immortelles, Gladiolus, Lilies, Roses, Plants, Garden Implements. Beautifully illustrated. Over 100 pages. Address

ROCHESTER, N.Y. & CHICAGO, ILL

179-183 East Main St. 200-206 Randolph St

THE CHAMPION CORN PLANTER



The above cut represents an implement long desired by the farmer. It will drop, cover and plant two rows at once, and is so arranged that the corn is dropped in hills, and can be worked both ways. The work is done even more accurately than in the old way. Every Planter fully warranted. Send for circular to

J. C. DURBOROW & CO.

GENERAL AGENTS,

35 Light Street, Baltimore.

FARM WAGONS

FOR SALE BY

THOS. NORRIS & SON,

Manufacturers and Dealers in

Agricultural Implements, Machinery, Seed, &c.

60 LIGHT STREET, BALTIMORE.

AGENTS \$100 PER MONTH SELLING MANNING'S STOCK BOOK

Are making every farmer needs it. It is the latest and most complete work ever issued in America treating of Horses, Cattle, Sheep, etc., their breeds, breeding, training, causes of disease, symptoms, and remedies. Over 1,000 pages, 400 illustrations. Highly endorsed by such eminent authorities as the President, Vice President, and Secretary of Philadelphia College of Veterinary Surgeons, Hon. J. W. Gassaway and others. Farmers, their sons, and agents desiring profitable work should send at once for full particulars and terms. Address HUBBARD BROS., 725 Chestnut St., Philadelphia.

The Philadelphia Musical Journal

MONTHLY PAPER DEVOTED TO MUSIC & LITERATURE.

PHILADELPHIA MUSICAL JOURNAL, 1300 CHESTNUT STREET.

\$2 WORTH OF MUSIC for 10 CTS.

Music in the March No. of Journal:

1 Romance, instrumental; Beethoven. 2 Joyous Farmer, instrumental; Schumann. 3 Margherita, vocal; Gounod. 4 When Hopes are Dead, vocal; Wood. 5 Willow and the Lily, vocal; from the opera of "Claude Duval." 6 When Autumn Leaves Fall, instr.; Fruman. 7 Marquis et Marquise, instrumental; Morley. Single number 10c.; yearly subscription \$1.

ASBESTOS

A GOOD FARMER must be Jack-of-all-trades, but the most important thing about a farm is to have the buildings well painted. And the art of painting is not in knowing how to spread it on (as this is soon learned), but the mixing is the important point, as great care should be used in the manipulation and selecting of oils, driers, pigments and minerals that enter into its composition. Now, all this is made easy by using the ASBESTOS Paint, which is ready mixed for the brush. Made of pure oil, and has a body equal to two coats of white lead. Send for particulars, color sheet and reduced price list to

J. L. REED,

170 and 172 NORTH FOURTH STREET, PHILADELPHIA,

DEALER IN ALL KINDS OF ASBESTOS MATERIALS.

WANTED—FARMERS AND DEALERS TO KNOW

That the CHEAPEST and BEST Fertilizer for all crops is

BAUGH'S PURE DISSOLVED RAW BONE

WARRANTED to be composed of Pure Raw Bones and Oil of Vitriol only. Send for our descriptive pamphlet showing Guaranteed Analysis. "Sent Free." Dealer wanted in every county. Address

BAUGH & SONS, Philadelphia or Baltimore.

\$400 IN CASH PRIZES TO GROWERS of the Best VEGETABLES from our SEEDS. \$75.00 for the BEST 5 CABBAGES. \$125.00 for the BEST 5 MELONS. Catalogue FREE. VALLEY GREENHOUSE, Springfield, O.

SAVED

8c. per bushel can be SAVED in raising Corn and 25c. in Wheat by using our HARROW. Our PULVERIZER contains 75 lbs. of steel blades in three frames covering 10 feet. Warranted the most powerful Pulverizer known. For Illustrated Pamphlets address THOMAS HARROW CO., Geneva, N.Y.

PLANTS BY MAIL.

We will send by mail, post-paid, to any address in the United States, on receipt of one dollar (\$1.00), ten Roses of the best varieties.

or, 10 Ampelopsis Veitchii.
8 Azaleas, assorted.
6 Begonias, flowering.
10 Calla Ethiopica.
8 Camellias, assorted.
8 Cissus discolor.
4 Crotons, best varieties.
6 Carex laevigata.
8 Lantana borbonica.
8 Ordoxia regia.
4 Daphne odorata.

or, 4 Dracenas, best varieties.
8 Abutilons.
8 Eranthemums, assorted.
10 Ferns, best varieties.
10 Gardenia florida, Cape Jasmine.
15 Geraniums, best varieties.
15 Heliotropes.
6 Marantas, best varieties.
8 Pandanus utilis.
8 Rhynchospermum Jasminoides.
12 Smilax.

We will send six of the above collection for \$5, thirteen for \$10, or the whole twenty-two collections for \$15. Having the largest place of the kind in the United States, we are in a position to offer the most reasonable terms. Descriptive Catalogue mailed free on application.

Successor to JOHN DICK, Jr.,

Fifty-third Street and Darby Road, Philadelphia.

PEOPLES' MUTUAL LIVE STOCK INSURANCE COMPANY

OF BALTIMORE, MD.

Office, No. 23 South Street,

Over the Firemen's Insurance Company.

THIS COMPANY INSURES

HORSES, MULES AND MILCH COWS

Against Death by Disease or Accident.

IT IS AN INSURANCE COMPANY, NOT AN ASSOCIATION.

Makes Yearly Reports to the Insurance Department of the State of Maryland.

PLAN MUTUAL.

ALL STOCK inspected by the Company's inspectors before policies are issued. For particulars send to the Company's office for circular, which gives all information as to plan, cost, etc. President, ROBT. S. CORSE, formerly of Clairmont Nurseries. Vice President, WM. B. SANDS, Editor American Farmer. Treasurer, GEO. W. S. HOFFMAN, of W. H. Hoffman & Sons, Paper Manufacturers, Baltimore county. Secretary, ELI W. FREE.

ROSEBANK NURSERIES,

GOVANTOWN, BALTIMORE COUNTY, MARYLAND.

Ornamental and Fruit Trees, Flowering Shrubs, Herbaceous Plants.

WE invite the attention of the public to our select stock of the following: STANDARD AND DWARF PEARS—2, 3 and 4 years. APPLES—Standard and Dwarf. CHERRIES—Standard and Dwarf. APRICOTS, CRAB APPLES, MULBERRIES, GRAPEVINES, of the most popular kinds, together with other small fruits. Our Collections of ORNAMENTAL TREES AND SHRUBS are large, and embrace most of the rarest sorts. ROSES on their own roots, with the newest of BEDDING-OUT PLANTS by the dozen or 1,000, for which we have issued a separate Catalogue.

SPECIAL.—Sixty thousand one and two-year-old ORANGE PLANTS, for hedges. CATALOGUES FORWARDED ON APPLICATION. ORDERS BY MAIL PROMPTLY ATTENDED TO. ALL GOODS DELIVERED IN BALTIMORE FREE OF CHARGE.

W. D. BRACKENRIDGE.

EASTERN SHORE NURSERIES,

DENTON, CAROLINE CO., MD.

SPRING OF 1882.

MY NEW PRICE-LIST for coming spring is ready, and will be mailed free to all applicants giving post-office address plainly written (including name of county). My prices are "SUBSIDIZED," so far as a downward tendency goes, while I am happy to inform my former customers and all the readers of THE AMERICAN FARMER that the growth of my stock was never better than the present season. Peach and Apple trees are particularly fine, while the list of valuable varieties has been greatly increased. A complete assortment of all kinds of Fruit, Shade and Ornamental Trees, an immense stock of Grapevines, Asparagus Plants, Flowering Shrubs, &c., &c. Correspondence solicited.

J. W. KERR, Proprietor.

LUMBER.

THOMAS MATTHEWS & SON,

83 N. High St. and Cor. Canton Ave. and Albemarle St., Baltimore.

White Pine and Yellow Pine LUMBER, for Building. Rough and Dressed Lumber.

HARDWOOD FOR WHEELWRIGHTS AND CABINET-MAKERS. SHINGLES, LATHS, PALES, Etc., AT LOWEST PRICES.

GEORGE O. STEVENS,

WINDOW SASHES, BLINDS & DOORS
49
LIGHT STREET,

BALTIMORE.

KEEPS IN STOCK AND FURNISHES TO ORDER: Window Sashes, Doors, Blinds, Mouldings, Brackets, Hand Halls, Balusters, Newel Posts, Bracket Shelves, Barge Boards, Window Caps, Door Caps, Porch and Church Work, Blinds, Hinges, Builders' Hardware, Wood Mantels, Window Frames, Door Frames, Paints, Oil, Putty, Glass, Lumber, Bricks, Lime, Sash Weights, Sash Cord, Porch Columns, Tree Boxes. The Best Work at Lowest Prices.

NO PEA IN THE WORLD IS EARLIER THAN



**LANDRETH'S
CELEBRATED EXTRA EARLY PEA,**
AS SOLD BY

DAVID LANDRETH & SONS, Philad'a,
In Sealed Muslin Bags.

THIS is the ORIGINAL EXTRA EARLY PEA, named and introduced by us in the year 1835, and stands to-day at the head of the first early sorts. We are supplying our EXTRA EARLY PEAS, put up in muslin bags of one bushel, halves, quarters and eighths, ready for sale to consumers. (No charge being made either for bags or labor.) The bags are bound with wire and secured by a leaden seal, stamped with our own name. We call the special attention of merchants to this form as one which will prove saleable, and to consumers we strongly recommend it as a measure of safety introduced by us to check the enormous frauds practiced by irresponsible parties who alike injure the conscientious merchant, the consumer and ourselves, by palming upon the public all sorts of trash as LANDRETH'S EXTRA EARLY PEAS.

**DAVID LANDRETH & SONS,
SEED GROWERS,**

21 and 23 S. Sixth St., bet. Market and Chestnut Sts., Philadelphia.

S. HAMILTON CAUGHTY.

NOAH W. CAUGHTY.

NOAH WALKER & CO.

CLOTHING and FURNISHING GOODS

165 and 167 W. Baltimore St.,

Between Calvert and Light Sts., SOUTH SIDE,

Washington Building, Baltimore, Md

ORDER DEPARTMENT.—Gentlemen's Clothing and Shirts, of any material and style, made to order with prompt and careful attention, and strict reference to the established reputation of the house for **TASTEFUL AND SUBSTANTIAL CLOTHING.** Prices guaranteed to be lower than merchant tailoring establishments generally. Their stock of **BOYS' CLOTHING**, from three years' old up, is unsurpassed. Samples of material, with directions by which any one can measure, and prices, sent by mail when desired.

B. GUS. HILL & CO.

PRODUCE

COMMISSION MERCHANTS,

195 LEXINGTON STREET,

BALTIMORE.

FARMERS' local orders for option trading solicited, and faithfully executed. Orders for **SEEDS** and **FERTILIZERS** promptly filled. **CONSIGNMENTS SOLICITED.** Reference, Howard Bank of Baltimore.

**GOOD
FERTILIZERS
BEST
GOODS
LOWEST PRICES
POWELL'S PREPARED CHEMICALS**

For \$12 a Farmer can buy a FORMULA (520 lbs) of **POWELL'S PREPARED CHEMICALS**

This, when mixed at home, makes One Ton of **SUPERIOR PHOSPHATE**, equal in plant-life and as certain of successful crop-production as many high priced Phosphates.

NO EXTRA EXPENSE. No trouble to mix. Full directions.

Brown Chemical Co
SOLE PROPRIETORS,
Baltimore, Md.

Powell's Tip Top Bone Fertilizer. Price only \$35 a Ton, net cash.
Bone Meal. Dissolved Bone. Potash. Ammonia.
And all high-grade Fertilizing Materials.

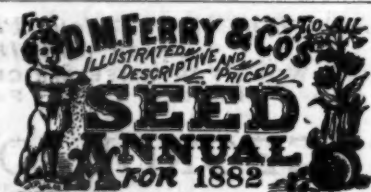
COTTON TOBACCO GRAIN AND VEGETABLES

(Established 1866.)
FAY'S BUILDING MATERIAL
For Boats, Walls and Cellars in place of plaster. Samples and catalogue mailed free. W. H. FAY, Camden, N. J.



DERICK'S HAY & COTTON PRESSES. are sent anywhere on trial to operate against all other Presses, the custom of keeping the one that suits best. No one has ever dared show up any other Press, as Dederick's Press is known to be beyond competition, and will bale with twice the rapidity of any other. The only way inferior machines can be sold is to deceive the inexperienced by ridiculous false statements, and thus sell without thought or seeing, and grind the purchaser. Working any other Press alongside of Dederick's always sells the purchaser a Dederick Press, and all know it too well to show up. Address for circular and location of Western and Southern storehouses and Agents.

P. K. DEDERICK & CO., Albany, N. Y.



D. M. FERRY & CO., DETROIT, MICH.

Seeds

We send our Illustrated Catalogue of "Everything for the Garden," FREE, on application.

We have advantages as Seedsmen of which we wish to tell the public. Thirty years experience as **PRACTICAL MARKET GARDENERS AND FLORISTS**, gives us such knowledge as to enable us to judge not only what are the best kinds for Fruit, Flower or Vegetable crops (whether for Private or Commercial Gardening), but also to thoroughly test the quality of all Seeds and Plants. Our Greenhouses and Frames in Jersey City, are the largest in America, covering upwards of four acres, solid in glass, employing an average of seventy men throughout the year.

PETER HENDERSON & CO.

35 Cortlandt Street, New York.

Plants

GEORGE PAGE & CO.



No. 5 NORTH SCHROEDER STREET, BALTIMORE, MD.
MANUFACTURERS PATENT PORTABLE STEAM ENGINES.

The Boilers the Safest and most Economical of Fuel made.

STATIONARY Steam Engines and Boilers, Patent Portable Circular Saw Mills, Sash, Muley and Gang Saw Mills, Flour Mill Machinery, Grist Mills, Shafting, Pulleys, &c., &c. AGRICULTURAL ENGINES A SPECIALTY. Lath, Shingle and Barrel Machinery, Luffel Turbine Water Wheels, Wood Working Machinery, all kinds; Tanite Emery Wheels and Grinders, Circular Saws, Saw Gummers, and Tools and Mill Supplies generally. Agents for **NICOLS, SHEPHERD & CO'S VIBRATOR THRESHING MACHINES.** COMPLETE THRESHING OUTFITS FURNISHED. Send for Descriptive Catalogue and Reduced Price List.

GEO. F. SLOAN & BROTHER,

LUMBER,

DOORS, SASH, BRICKS, &C.

IN LOTS TO SUIT.

132 LIGHT STREET WHARF,

BALTIMORE.

1828 CLAIRMONT AND FURLEY HALL 1800
NURSERIES.

Large Stock for Spring.

100,000 Apple Trees of all leading varieties. A large stock of Standard and Dwarf Pears, Peaches, Cherries, Plums, Damsons, Grapevines, Raspberries, including Gregg and Queen of the Market. 26 varieties of Strawberry Plants. Evergreen and Shade Trees, Shrubbery and Climbing Vines.

WM. CORSE & SONS,

Box 248, Baltimore City.

Nurseries—Bel Air Road, 2 miles from City.

J. M. LAROCHE'S ANTI-BILIOUS BITTERS
CURES

Dyspepsia, Nervousness, Bilious Attacks, Sick and Nervous Headache, Constipation of the Bowels, Kidney and Bladder Affections, Sour Stomach, Chills and Fevers, Female Diseases, All Bilious Affections, and is an Excellent Stomachic.

Is a purely vegetable, faultless Family Medicine, for all diseases caused by a deranged state of the Liver. It has been manufactured at Larocque's Pharmacy, Cor. Baltimore and Harrison Sts., for more than fifty years. Its efficacy in all forms of Liver Diseases has been tested and approved by thousands who have used it successfully. The price also is within the reach of all, being 25 cts. for packages and \$1 for the liquid in bottles.

REGULATES
Torpid Liver, and cures all diseases arising from a Disordered Stomach. Its use can be stopped at any time, without any bad effects. Always beneficial; never harmful. Be sure and get the genuine. Prepared at Larocque's Pharmacy, Cor. Baltimore and Harrison Sts., and having the signature of W. E. Thornton on the label.

W. E. THORNTON, PROPRIETOR.

N. E. Cor. Baltimore and Harrison Sts., Baltimore, Md.

Sold by Druggists and Storekeepers Everywhere.

PENNOCK'S PATENT ROAD MACHINE.

SENT ON TRIAL.

Manufacturers of "Matchless" Dump-Scraper.

S. PENNOCK & SONS' CO.,

Kennett Square, Pa., and Fort Wayne, Ind.

RUG PATTERNS! Agents wanted. For circulars address with stamp, **F. S. Frost & Co., Biddleford, Me.**

\$72 a week. \$12 a day at home easily made. Costly outfit free. Address **TRUE & CO., Augusta, Maine.**

\$777 A YEAR and expenses to Agents. Outfit Free. Address—**P. O. Vickery, Augusta, Me.**

REID'S CREAMERY
SIMPLEST & BEST.
Agents Wanted

BUTTER WORKER
Most Effective and Convenient
Also **Power Workers.**
Cap'ty 10,000 lbs. per DAY
Butter, Printers, Shipping
Boxes, etc. Send for circular.

A. H. REID,
26 S. 16th Street, Phila., Pa.



ARAWANA BUTTERCUP, 6050.

Windsor Herd JERSEYS.

WATTS & SETH,
28 ST. PAUL STREET,
BALTIMORE, MD.

NEW CROP PEAS, EARLY AND LATE.

FOR SALE BY

THOS. NORRIS & SON,

Manufacturers and Dealers in

Agricultural Implements, Machinery, Seeds, &c.

60 LIGHT STREET,

BALTIMORE.

Established] A. E. WARNER, [1811.

MANUFACTURER OF

SILVER WARE AND RICH JEWELRY

English, Swiss and American WATCHES of the Best Makers,
Importer and Dealer in Diamonds, Fine Watches,
Silver-Plated Ware, Table Cutlery, &c.

Wedding Presents,

Premiums for Agricultural Fairs, Fine Bronzes, Opera Glasses, Shell Jewelry, &c.

All of which is offered at GREATLY REDUCED PRICES.

No. 135 WEST BALTIMORE STREET, near Calvert, Baltimore.

FRANKLIN DAVIS.

EWD. H. BISSELL.

BALTIMORE NURSERIES.

FRANKLIN DAVIS & CO.

400 Acres in Nursery Stock. 100 Acres in Orchards.
100 Acres in Small Fruits.

WE offer to our customers an immense stock of APPLES, PEACHES, CHERRIES, APRICOTS,
GRAPES, &c., all the standard sorts. Also, the new varieties of FRUITS, ORNAMENTAL TREES,
SHRUBS, ROSES, &c. Wholesale and Retail. To dealers we can offer stock on favorable terms, and the
best facilities for packing and shipping. Catalogues mailed on application.

FRANKLIN DAVIS & CO.

Office Cor. Baltimore and Paca Sts. (over People's Bank), BALTIMORE, MD.

Ground Raw Limestone as a Fertilizer.

The interest among intelligent farmers is increasing on the subject of

GROUND RAW LIMESTONE AS A FERTILIZER.

Wherever enough has been used, say 700 to 800 pounds per acre, the result has always been satisfactory. A Marylander writes us that he distributed twenty-five tons in October last on different farms, and up to this time it is equal in every case to the best Phosphates, and in some cases is superior to all other Fertilizers. An analysis of the celebrated Blue Grass region of Kentucky shows 2.464 parts carbonate of lime and 0.319 phosphoric acid. That is, there is eight times as much Ground Raw Limestone in the virgin soil of the Blue Grass region as there is of Phosphates or Bone Dust. Our formula for the best Fertilizer has always been 700 pounds of Ground Raw Limestone to 100 pounds of Bone Dust. No one in their senses questions that Phosphates do good to the land, and no one in their senses ought to deny, in view of the analysis of the Blue Grass soil, that Ground Raw Limestone should be the BASIS of Phosphates and Bone Dust 7 to 1. Grain contains 46.10 carbon; straw contains 4.6 carbon; and yet professional men tell us that plants get all their carbonic acid from the atmosphere. The facts are against them. Nature put eight times as much carbonate of lime in the Blue Grass region as phosphoric acid.

For further information, and cost of machinery for making the new Fertilizer, inquire of

TOTTEN & CO., PITTSBURG.

It can be made for 4½ cents per bushel, or less than \$1.50 per ton, and every farmer can prepare his own Fertilizer with ordinary horse power.

PRICES OF MACHINES.

1 horse power. \$100. 3 horse power. \$300. 5 horse power. \$570.

GILPIN'S VEGETABLE LIVER PILLS

ARE prepared, with great care, from medical plants; are coated with sugar, that they may be taken by the smallest child and upon the most delicate stomach; are intended especially to act upon the Liver, thereby relieving all such diseases as COSTIVENESS, HEADACHE, PARALYSIS, DYSPEPSIA, COLDS, JAUNDICE, and all diseases of a bilious origin. No better evidence can be offered in favor of these Pills than the very fact that where their ingredients are known to family physicians, they are using them in their private practice. We append the following from one of our most prominent physicians:

OAKLAND, June 28, 1890.—Dr. Gilpin: After carefully examining the formula of your Sugar-Coated Pills, I feel it but justice to say that the combination is certainly perfect, and compresses the only remedies I ever believed were the proper ones to be used in diseases of a bilious origin. I shall take pleasure in recommending them, not only to my patients but the entire medical profession. Yours truly, J. M. WISTAR, M.D.

From one of the leading retail druggists of West Virginia:
WESTON, W. VA., June 18, 1890.—Messrs. Canby, Gilpin & Co.—Gents: Please send by express twelve dozen Gilpin's Vegetable Liver Pills. I have the most flattering accounts from all who have used them, and believe the day is not far distant when they will supersede all others. Yours, F. M. CHALFANT.

We could fill several pages with certificates, etc., from prominent men throughout the country, but prefer to let the Pills in the future, as they have in the past, rest entirely on their own merit, knowing that wherever they are known their use will pass down from generation to generation.

GILPIN'S VEGETABLE LIVER PILLS are sold by all respectable druggists and country storekeepers throughout the United States and Canada.

Principal Depot, CANBY, GILPIN & CO., Baltimore.

FOR SALE.

ONE YOKE WELL-TRAINED HOLSTEIN
OXEN, with yoke and nearly new cart.

APPLY AT

S. M. Shoemaker's Place,

Near Stevenson's Station, N. C. R. W.

BALTIMORE CO., MD.

STRAWBERRY PLANTS,

BY the 100 or 100,000. Have a large and pure stock of all the leading standard varieties, and many of the newer sorts. Sharpless, Miner's Great Prolific, Mt. Vernon, Cumb. Triumph, 75c. per C.; 65c. per M. Crescent Seedling, Monarch, Kentucky, Duncan, Wilson, Chas. Downing, 40c. per C.; \$2.25 per M. Also,

RASPBERRY PLANTS.

Gregg, \$18 per M.; Cuthbert, \$11; Brandywine, \$9.

R. S. COLE,

Cedar Hill Fruit Farm,

Hayman's, A. A. Co., Md.

REGISTERED JERSEYS.

Chatsworth Farm,

Reisterstown, Balto. Co., Md.

FOR SALE.

REGISTERED CALVES, tracing to such bulls as Lord Rex 1413, De Lancy 2334, and Watts 2613, the two first combining the blood of Albert, Splendid, McClellan and Pansy 8. The excellence of LORD REX, now at the head of my herd, is everywhere conceded. My herd took at the Baltimore County Fair of 1881 the Special Jersey Herd Prize of \$100, and five other First Prizes, the judges being John V. N. Willis, Esq., of New Jersey, and Collin Campbell, Esq., of Pennsylvania, and the conditions of competition unusually exacting.

ANDREW BANKS.

Jersey Red Pigs.

From Largest Herd South, which took Five Premiums and Special Mention at Virginia State Fair, 1891.

THIS hog is free from disease, a natural grazer, prolific and early to mature. Catalogue free. Also, COLLIE PUPS in April, from imported strains.

T. LOVELOCK, Gordonsville, Va.

SHORT-HORNED CATTLE, COTSWOLD SHEEP, POLAND-CHINA PIGS.

A few choice young bulls now ready for sale.

J. B. GRAY,

Fredericksburg, Va.

G. W. LEHMANN, Ph. D.

Chemist and Metallurgist

Baltimore, Copper Works.

W. MAGER,

Formerly Chemist of U. S.

Fertilizer Control Station

LEHMANN & MAGER,

CHEMISTS AND ASSAYERS,

57 S. GAY ST., BALTIMORE, MD.

ANALYSES of all descriptions—Manures, Soils, Chemical Fertilizers, Ores of Gold and Silver (by fire process), Copper, Lead, Manganese, etc. Clays, Coal, Limestone and other minerals. Water for steam, manufacturing and household use. Mineral waters and various products of art. Terms moderate.

Card Collectors!

1st.—Buy seven bars DOBBINS'S
ELECTRIC SOAP of your Grocer.

2d.—Ask him to give you a bill
of it.

3d.—Mail us his bill and your full
address.

4th.—We will mail you FREE
seven beautiful cards, in six colors
and gold, representing Shakespeare's
"Seven Ages of Man."

I. L. CRAGIN & Co.

116 S. Fourth St.,

PHILADELPHIA, PA.

NEW FRUIT ORNAMENTAL TREES & SHRUBS, ROSES, 1882.

Besides the largest and most complete general
stock of Fruit and Ornamental Trees, Roses, etc.,
in the U. S., we offer many Choice Novelties.
New Abridged Catalogue mailed free to all who
apply. Address ELLWANGER & BARRY,
Mount Hope Nurseries, Rochester, N. Y.



THIRTY-SIX Varieties of Cabbage; 26 of Corn,
23 of Cucumber, 41 of Melon, 23 of Pear, 23 of
Beans, 17 of Squash, 23 of Beet and 40 of Tomato,
with other varieties in proportion; a large portion
of which were grown on my five seed Farms, will be
found in my "Vegetable and Flower Seed Catalogue
for 1882," sent free to all who apply. Customers of
last season need not write for it. All Seed sold from
my establishment warranted to be both fresh and
true to name, so far, that should it prove otherwise, I
will refund the order gratis. The original introducer
of Early Ohio and Burbank Potatoes, Marblehead
Early Corn, the Hubbard Squash, Marblehead Cab-
bage, Pinney's Melon, and a score of other new
Vegetables. I invite the patronage of the public.
New Vegetables a specialty.

James J. H. Gregory, Marblehead, Mass.

BERKSHIRES FOR SALE

At Reasonable Prices.

I BREED only from the most choice stock of the
country, in pedigree, form and markings. All
stock recorded, and can be seen at any time. Also,
Black-Breasted, Red-Breasted, and Blue GAME
CHICKENS, or eggs of superior stock for sale. Stock
shipped as represented. Correspondence solicited.

THOS. A. HAYS, Churchville, Md.

To Dealers & Consumers of Paints

We respectfully call your attention to our Emame-
l Ready-Mixed Paints, prepared for imme-
diate use, which is rapidly superseding the ordinary
Paint. Experience has fully demonstrated that it
will stand exposure to the weather much longer than
Paint mixed in the usual way, that it will retain its
Brilliance of Color, and will not crack or peel off.

EUTAW PAINT CO.

Manufacturers of

WHITE LEADS

PUTTY,

Snow White

ZINC

&c.

PAINTS

In Oil,

COLORS,

SALTPETRE,

CHEMICALS, &c

100 W. LOMBARD ST.

BALTIMORE, MD.

It can be applied by any person, and the expense of
employing a painter is saved, whilst the cost of the
Paint will be one-third less than when mixed in the
ordinary way.

We are prepared to give any information that may
be desired on application by mail or in person, and
solicit a trial from you to be convinced of the above
statements. Address—

Eutaw Paint Co.

100 W. Lombard Street,

BALTIMORE, MD.

"High Grade" Ammoniated Super-Phosphate.

**"Bos" Ammoniated Super-Phosphate,
GRAIN GENERATOR.**

DISSOLVED S. C. PHOSPHATE,

12 to 15 Per Cent. Available Phosphoric Acid.

DISSOLVED ANIMAL BONE.

AGRICULTURAL CHEMICALS.

We have in stock a full line of the above goods.

**WM. DAVISON & CO. 118 W. LOMBARD STREET,
BALTIMORE.**

To FARMERS & STOCK OWNERS



THE
ATTENTION
OF
FARMERS,
STOCK OWNERS
DAIRYMEN
AND
POULTRY
KEEPERS
is called to the
SPECIALTIES
made by

The Rittaker Manufacturing Co.

1. **The Indian Condition Powder.**—Unlike many powders now on the market, which act on y as a stimulant, these powders, an entirely vegetable compound, possess the qualities of a tonic—invigorating and developing the natural powers of animals, and being a mild purgative, keep the system in a healthy condition, enabling the animal to do more work and to resist the approach of disease. To dairymen these powders are invaluable, largely increasing the yield of milk, enriching the cream and adding greatly to its butter-making properties. When used on dairy farms it has everywhere given most complete satisfaction.

2. **The Indian Ointment.**—For the cure of cuts, sores, and all skin diseases on man or beast. The healing properties of this ointment when applied to sores of the longest standing are perfectly marvelous, allaying the inflammation at once and working a cure after a few applications.

3. **The Rittaker Chicken Food.**—For prevention and cure of all diseases incident to poultry yards. Poultry keepers find, after brief trial, a very large increase in the production of eggs, and marked improvement in the weight and appearance of fowls. As a promoter of growth in young fowls it has no equal, keeping them in health and free from vermin.

4. **The Shepherd's Lotion.**—A chemical preparation for prevention and cure of scab, rot, &c., in sheep and swine. This preparation needs only a trial to prove its worth.

One-pound box samples of the Condition Powders or Chicken Food, or a sample box of the Ointment, will be forwarded to any address, post paid, on receipt of 25 cts. in stamps or currency. Address for samples or circulars, **The Rittaker Manufacturing Co., 1708 Wiley Street, Philadelphia, Pa.**

**HIGH CLASS
PLYMOUTH ROCKS.**

Eggs \$2.00 Per Setting.

SURPLUS BIRDS ALL SOLD.

E. B. OWENS,

153 W. Pratt St., Baltimore.

\$5 to \$20 per day at home. Samples worth \$5 free. Address
STINSON & CO., Portland, Maine.

WM. STUART SYMINGTON.

OFFICE, 7 German St., Baltimore. SYMINGTON BROS. & CO. WORKS, Locust Point, Baltimore.

Manufacturers of the

ORIOLE FERTILIZERS,

VIZ.:

Oriole Oakley Wood Fertilizer
For Red Lands.

Oriole Piney Wood Fertilizer
For Grey Lands.

Oriole Acid Phosphate.

Oriole Dissolved Bones.

Oriole Amm. Superphosphate

Each brand is made under a different and distinct formula, and each contains what is most needed by the particular soil for which it is intended. We guarantee our goods exactly as represented.

SYMINGTON BROS. & CO., Manufacturing Chemists.

TRUTH ATTESTED.

Some Important Statements of Well-Known People Wholly Verified.

In order that the public may fully realize the genuineness of the statements, as well as the power and value of the article of which they speak, we publish herewith the fac simile signatures of parties whose sincerity is beyond question. The truth of these testimonials is absolute, nor can the facts they announce be ignored.

ATLANTA, GA., March 3, 1894.
H. H. Warner & Co., Rochester, N. Y.
GENTLEMEN—For twenty years I have suffered more or less from my bladder and kidneys. My business for many years has required me to travel all over the southern states. Whilst going to Texas last fall, I saw in a paper an advertisement of Warner's Safe Kidney and Liver Cure. I bought a bottle, and in less than a week the improvement in my health was palpable. Since then, my general health has improved wonderfully, and I now enjoy a degree of health and strength, in every particular, such as I had not hoped it possible to enjoy again in this world—of which I am satisfied, under God's blessing, has been due to your remedy.

Ino. C. Whitner

OFFICE OF ORDINARY, MUSCOGEE Co.,
COLUMBUS, GA., Oct. 1, 1891.

H. H. Warner & Co., Rochester, N. Y.
GENTLEMEN—For Eighteen Months I suffered intensely with a disease of the kidneys and a torpid liver, and after trying every remedy that I could hear of, besides being under the treatment of some of our ablest physicians, I had about given my case up as hopelessly incurable, when I was prevailed upon by my wife to try your Safe Kidney and Liver Cure. I confess I had but little faith in its merits or efficacy; but to my great satisfaction, after I had commenced on the second bottle, I continued the use of the medicine until I became completely cured.

F. W. Brooks.

Judge Court of Ordinary.

Thousands of equally strong endorsements—many of them in cases where hope was abandoned—have been voluntarily given, showing the remarkable power of Warner's Safe Kidney and Liver Cure. In all diseases of the kidneys, liver and urinary organs. If any one who reads this has any physical trouble, remember the great danger of delay.

Wanted, on Salary,

LADIES in every neighborhood to get up clubs for something New. Suitable for an Elegant Present. Send 25c. in stamp, with references, for sample, full instructions and terms to agents.

F. L. HORTON & CO., Indianapolis, Ind.

WANTED.

SECOND-HAND VOLUMES of the AMERICAN JERSEY CATTLE CLUB HERD REGISTER.

Address, giving number of volume and price,

S. T., Care AMERICAN FARMER OFFICE.

THOS. A. SYMINGTON.

SLINGLUFF & CO.

OFFICE, 157 W. Fayette St. } **BALTIMORE.** } WORKS, Foot Lenderhall St.
Manufacturers and Manipulators of

PHOSPHATES.

We are now offering to the trade the following **WELL-KNOWN BRANDS OF GOOD**, which we guarantee fully up to the standard:

SLINGLUFF'S DISSOLVED GROUND BONE,

Containing 8 per cent. of Ammonia.

SLINGLUFF'S DISSOLVED SOUTH AMERICAN BONE ASH,
Containing 40 to 44 per cent. Soluble Bone Phosphate.

SLINGLUFF'S DISSOLVED SOUTH CAROLINA PHOSPHATE,
Containing 28 to 32 per cent. Soluble Bone Phosphate.

To meet the demand for a High-Grade Fertilizer, we are offering

SLINGLUFF'S NATIVE SUPER-PHOSPHATE,

Prepared entirely from Animal Bone, highly ammoniated. Also,

SLINGLUFF'S No. 1 AMMONIATED SUPER-PHOSPHATE.
This we can confidently recommend as one of the best fertilizers sold in the market at the price.

R. J. BAKER.

ESTABLISHED 1837.

R. J. HOLLINGSWORTH.

**SULPHATE
OF
AMMONIA.**

R. J. BAKER & CO.

**PURE
NITRATE
SODA.**

MANUFACTURERS AND DEALERS IN

Pure Ground Bone, Chemicals, Acids, &c.,

For Manufacturing Super-Phosphates.

AMMONIATED SUPER-PHOSPHATE FOR ALL CROPS.

PURE DISSOLVED RAW BONE.

PURE FINE GROUND RAW BONE.

STAG SUPER-PHOSPHATE OF LIME FOR TOBACCO.

FACTORY AT LOCUST POINT.

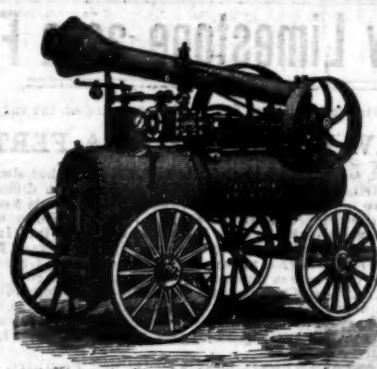
Office, 36 & 38 S. Charles St., Baltimore, Md.

**JOSHUA THOMAS,
STEAM.**

Agricultural and Mill Machinery

**ECLIPSE
AGRICULTURAL ENGINE**

**FIRST PREMIUM WHEREVER
EXHIBITED.**



**Best, Cheapest,
and most
Economical En-
gine in the
Market.**

Buffalo Pitts Thresher and Cleaner,

The old standard, and still ahead of all competitors.

**KIRBY AND WHEELER MOWERS AND REAPERS,
OSBORNE SELF-BINDING HARVESTER.**

**A Full Line of Harvesting Machines, adapted to the
wants and taste of Farmers any and everywhere.**

**Buckeye Grain and Fertilizer Drill, Circular Saw Mills,
Star, Victor and Iron Horse Rakes, Portable Grist Mills,
Millstones, Smut Machines, Bolting Cloths, Buckeye Force Pump,
Mill Picks, Leather and Gum Belting, Cucumber-Wood Pumps,
The Watt and Ball Plows, &c., &c.**

Prices and Descriptive Circulars on application, and correspondence solicited from all wanting anything in my line.

OFFICE AND WAREHOUSE,

No. 53 Light St., Baltimore, Md.

ENTERED AT POSTOFFICE, BALTIMORE, AS SECOND-CLASS MATTER.